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The Longest String of 15½-in. Casing Ever Set in Wyoming

Wertz Dome.—No. 8 sec. 7-26-90; waiting for cement to set on string of 15½-in. casing at 2291 ft. This is the longest string of 15½-in. casing ever set in Wyoming.

(REPRINTED FROM INLAND OIL INDEX, ISSUE OF OCTOBER 14, 1927)

Run With the Butler Slip Ring Elevator

(PATENTS PENDING)

The fact set forth in the clipping reproduced above, from the *Inland Oil Index, Oct. 14,* is of more convincing importance than any comment on our part could possibly be—that when the *supreme test came,* a *Butler Slip Ring Elevator* was selected to handle it.

Further, we have the word of Mr. Floyd Hatfield, superintendent at Wertz Dome, that this immense weight was handled with maximum speed and satisfaction, and without mishap.

Great strength, the development of tremendous gripping power, and the attainment of high speed performance are chief among the distinguishing characteristics of the all-steel *Butler Elevator.*

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WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

West Texas Replacing Seminole As Market Disturber

Steady increase of potential production and drilling operations in Yates and Hendricks fields threaten market cut in that section

By KENT RIDLEY

ENCOURAGEMENT toward the feeling that better market conditions are ahead which attend a slight decline in the estimate for last week, are offset by the situation in West Texas, where very substantial amounts of oil are shown to be available, with the prospect that restrictions which have held that flood in check may be removed. Seminole is showing strong tendencies to decline now and those are to be found who express the opinion that the trend from now on will be decidedly down. But such calculations have been made before.

West Texas has two big fields, one of which is being produced to its limit and the other—the Yates shallow field, with an indicated daily potential above 600,000 barrels, as shown by an hour's open flow, and probabilities of reaching a million barrels daily, is in danger of having restrictions removed.

Big Wells Completed

Although the number of new oil producers completed last week numbered only 212, as against 237 for the previous week, the total initial production was greater, the figures for the two weeks being 134,516 and 116,312 barrels, an increase of over 18,000 barrels.

This increase in the average yield per well was caused by the completion of three unusually large and several large wells in West Texas. Of the total 134,516 barrels new oil, 99,637 barrels came from Texas fields; and of the Texas total 86,362 barrels were furnished by four counties, Crane, Howard, Pecos and Winkler. The Yates shallow field in Pecos County reported 77,572 barrels initial from 11 new producers. This new oil of the Yates field represents more than 75 per cent of that of the State, and over 50 per cent of the total for the United States.

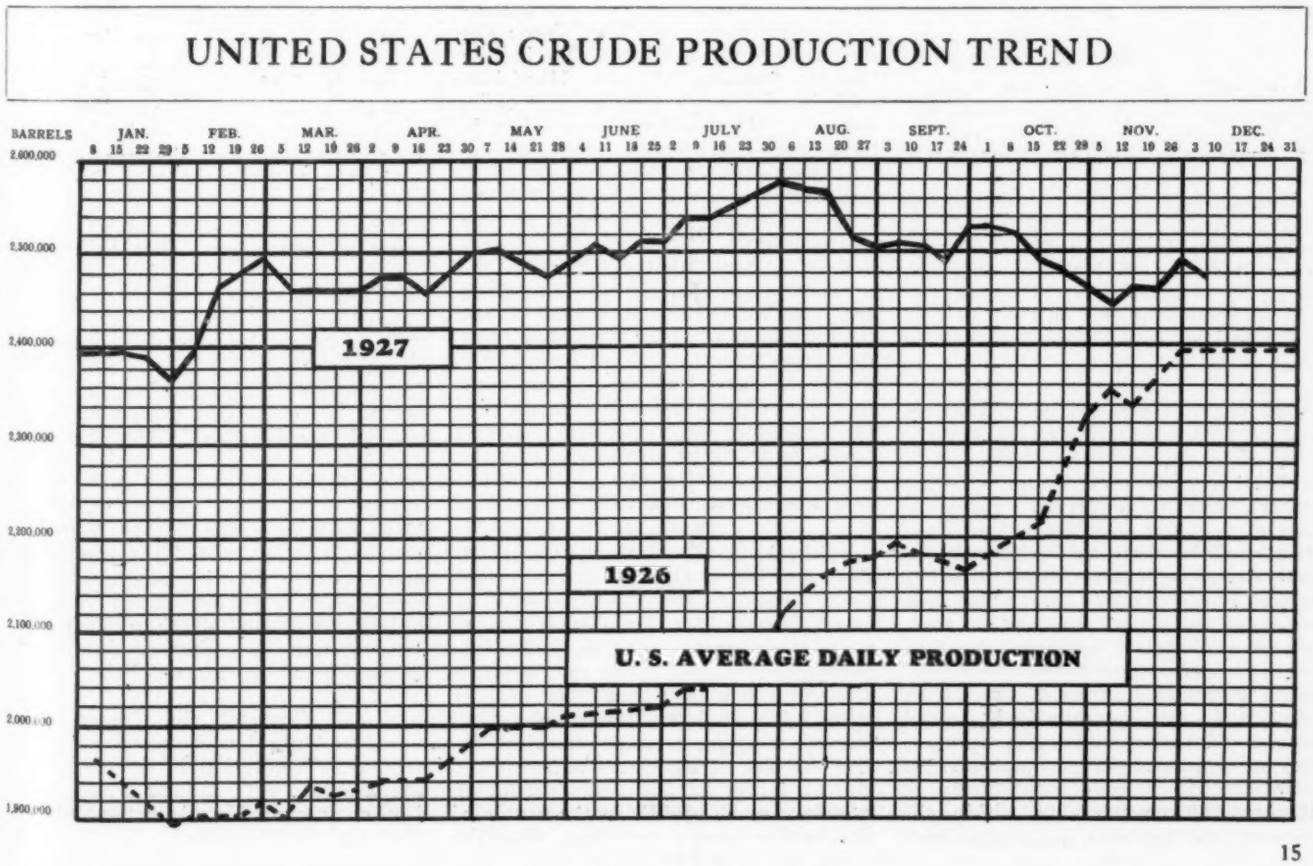
Texas had 125 completions during the week, as against 120 for the previous week, and the oil producers numbered 64, an increase of seven.

Among the 71 tests completed in Oklahoma there were 42 oil producers which had an inital production of 22,221 barrels. During the previous week 43 wells had a combined initial of approximately 19,000 barrels. California furnished nearly 10,000 barrels of new oil from 15 producers, while during the previous week 13 wells had a combined initial yield of over 14,000 barrels. Kansas supplied only 800 barrels of new oil, seven oil producers being included among the completions; during the previous week 16 wells yielded 5440 barrels initial. Louisiana's activity declined further; there were only three producing oil wells among the completions, yielding 175 barrels of new oil.

Permits issued during the week ending December 3 totaled 270, as compared with 276 for the previous week, the number varying only slightly in most sections. Texas issued 139, an increase of four; Louisiana 18, increase of two, and California 36, as against 22 for the previous week. Oklahoma, Arkansas and Kansas issued fewer permits than during the week before, the figures being as follows: Oklahoma 55, a decrease of 20; Kansas 18, decrease of five, and Arkansas four, decrease of one.

Situation at Seminole

The Mid-Continent oil market had



DETAILS ON CRITICAL FIELDS

Pool—	Oil Wells Completed	Total Initial Production	Initial Per Well	No. Producing Wells	Daily Production Barrels	Daily Production Per Well	Rigs Up	Wells Drilling
PANHANDLE								
Hutchinson County	1,078	541,340	502	987	58,615	59	7	24
Gray County	175	66,250	379	168	18,275	109	16	36
Carson County	176	58,655	333	156	7,910	51	..	6
Wheeler County	41	14,170	346	34	1,255	37	4	9
Totals	1,470	680,415	463	1,345	86,055	64	27	75
WEST TEXAS—								
Church & Fields	162	191,855	1,184	158	90,540	573*	3	20
Gulf-McElroy	55	49,700	904	55	29,345	370	1	1
Hendricks	24	75,160	3,132	30	38,870	1,296*	18	64
Yates	74	451,850	6,106	72	43,855	609*	32	40
Totals	315	768,565	2,440	315	193,610	615	54	125
OKLAHOMA—								
Seminole	1,139	1,483,460	1,302	1,035	406,279	392	16	166

*Porduction partially pinched.

a brighter outlook with the opening of this week than at any one time during the past six weeks. Seminole continued to be the one outstanding determinent, and with a turn in production that apparently is destined to carry it to a new low figure since the peak, the situation is expected to be considerably relieved within the near future.

Production from the five Seminole fields Monday was 406,279 barrels, which placed it at that time approximately 24,000 barrels under the runs for the same day one week before. The drop over the week-end was roughly 9,000 barrels, and indications were that the decline would continue, although an increase of 600 barrels was recorded Tuesday. The shooting program in the area is nearing the end, and operations continue to decline, while new well initials continue to grow smaller.

Unless the unexpected again turns up at Seminole, the territory bids fair to drop more than 50,000 barrels within the coming 25 days, or the close of this year. After that the decline is predicted to continue, inasmuch as new operations are scarce and present drilling wells are not amounting to anything alarming. The well average for the five fields this week dropped to 392 barrels, the first time it has been below the 400-barrel mark.

Another fact: that a possible flood of West Texas oil will not materially endanger the demand for Seminole and other Oklahoma and Kansas high grade oil, tends to offer relief in the theory that Seminole's decline will not be followed by the great menace predicted to result from West Texas.

The good to be reaped from the predicted decline in Seminole production will be largely determined by the action of operators following such a probable performance. If activity increases, due to operators becoming overly optimistic after the decline, then there will be little to be gained, for chances for demands for oil to bring better prices would immediately be weakened by a new flood of oil from intense exploitation following the turn for the better in near future production. With Seminole's present production turn and the comparatively small amount of drilling activity in the area, and other possible dangerous areas, the situation has a good opportunity to brighten up considerably within the coming quarter—that is, if operators will let well enough alone, and allow the declining production to create on its own part a demand for high grade oils that will effect a price raise.

West Texas Price Threatened

The steady increase of potential production and drilling operations in the Yates and Hendricks fields, which are the two major production threats offered by West Texas, is creating a market situation that may cause another price cut in this low grade of sulphur contaminated oil. The production of the former field is being limited to actual pipe line outlets, but that of the Hendricks field is going out in tank cars at less than the cost of handling, plus the posted price of 60 cents per barrel. Several contracts have been made by small operators in the Hendricks field to sell their production below the posted price to independent pipe line companies serving and building into the field with loading rack lines, and more such contracts are available. Producers had rather take less for their oil than to provide storage in the field. Southern Crude Oil Purchasing Company, which is the largest producer in the Hendricks field, is offering to sell any part of its output at 67½ cents per barrel f. o. b. tank cars.

Opposition being raised by small lease owners in the Yates field to the proposed change of proration of pipe line runs on a basis of proven acreage beginning next month, endangers the production restrictions in this flush area. Should the proration plan be discarded, cheaper crude prices would follow immediately, and each operator would be forced to erect large tank farms, or build lines to distant railroads, while a most costly item would be the handling of the cut oil from the wells on the low points of the structure, where water is already encroaching.

California

With the heart of the Long Beach field showing small wells in the deeper zone, latest developments point to a smaller production from that famous area than early estimates indicated. While there is no doubt that production will soar far above its present level, conservative estimates place the maximum output from the field at 150,000 barrels. It has developed that the deeper layers of the main producing zone are not a prolific in the center of the field as around the edges, since the center wells have been producing from much lower in the sand than those along the flanks. The gas pressure seems to have been depleted much faster on top of the structure than in the remoter sections of the field. It is too early to predict the size of wells near the middle of the field, but they are expected to average smaller than those deepened along the edges. The undertone in the California market has undoubtedly been strengthened by the action of several favorably located completions, which produced only a few hundred barrels.

The Seal Beach field registered a decline of 3,000 barrels during the week, resting at 45,500 barrels. A still further decline is expected.

The new Rincon field has been somewhat disappointing, but operators are ignoring the failure of the Pan-American Petroleum Company to locate the water in the oil sand. Ten wells are drilling, six rigs have been completed and seven new locations have been made.

The domestic consumption of gasoline in California is probably breaking all records for early winter months. The last quarter is expected to show a large gain over the same period last year. Exports are large, while the upper Pacific Coast trade is unusually brisk.

The demand for gas oil has been unusually heavy during the past month, due to enormous quantities used by fruit growers to fight frost. Surplus stocks of this commodity have been reduced greatly.

Fuel oil is moving at a fair rate, with the quotations remaining steady. Competition along the Atlantic seaboard continues especially keen.

Oxford, Kansas—Roxana Petroleum Corporation's Rothwell 1, located to the north of Meade Brothers' Oxford field extension well to the southwest of the town, is believed to have found the most prolific sand yet encountered in the Oxford vicinity. The Stalnaker sand was topped late last week at 1962 feet and swabbed 335 barrels in 13 hours. The well was shot Friday afternoon of last week, following the swabbing with 140 quarts, and was estimated as good for 1000 barrels.

Oxford's total production was running more than 9000 barrels daily from 26 producers, and following the opening of the southwest extension offers a much stronger field than was predicted to result from the original townsite stuff.

The J. A. Hull Company's South Newman 2, in section 24-32-4, Winfield, Kansas, field, extended the productive area slightly to the southwest last week, when it got 500 feet of oil in the hole from a total depth of 3041 feet. It showed up for a good producer after being shot with 240 quarts Friday afternoon.

In the Churchill field, three miles north of Oxford townsite, Roxana Petroleum Corporation is fast establishing a record for producing wells, having completed 52 oil wells and not drilled a single failure.

Institute Accepts Legislation As Means of Curtailment

Changes in both State and federal laws desired while "simple enactment" in Oklahoma, Texas and California would relieve present situation

By GRADY TRIPLETT

CHICAGO, Illinois—Both standardization and conservation, two of the major efforts of the American Petroleum Institute, were raised to higher planes the first day of the eighth annual meeting here December 6. Conservation, through agreement in field development, had its first official sanction of the institute, when the report of the committee on agreements was adopted by the board of directors. Standardization progressed through the completion of some work of committees and the development of others.

The one general session of the institute came this afternoon, being devoted to the annual address of the president and the election of 31 directors.

President Clark devoted his address largely to the subject of conservation, or waste, terms, which he said had not been properly defined by critics of the petroleum industry. Turning to the subject of the supply of crude oil, he mentioned the work and report of the Committee of Eleven, named by the Institute to make a survey of this resource. Concerning the challenge that the report of this committee estimated the supply in excess of the true condition, he said:

"I believe that the major part of the report on supply as it stands has, within the short period of two years, been thoroughly and entirely vindicated, while I realize that a prediction is always dangerous, I venture the assertion that the time is coming when the work of the technical men who prepared the figures for this report will be fully appreciated, and the statement may be truthfully made that in view of the information and light they had on the subject at that time on supply was not very short of an inspiration."

The position of the Institute in regard to accepting the invitation of the Secretary of the Interior to name a committee to co-operate with the government and the American Bar Association in determining new laws in respect to oil and its conservation, was stated as follows:

"In committing ourselves to discussion, to study, we are not committting ourselves to definite conclusions, either as to law or policy. Nothing but good can come from having this committee, or any other body or fair-minded committee, grapple with the law and the facts of our situation. In fact, it is our duty to continue to co-operate with the representatives of state and federal governments in the consideration of any problem to which they invite our attention."

He next traced the history of the petroleum industry to show its accomplishments.

Sinclair and Doheny Re-Elected

Any doubt of the attitude of the petroleum industry toward Harry F. Sinclair and E. L. Doheny, whose leases of Naval Oil Reserves were made void through court action, was removed when the two men were named directors at the general meeting.

By adoption of a report from the committee on agreements, the board of directors put the institute in the attitude of favoring and advocating a legislative program to make legal agreements between oil producers for the purpose of restricting the output of crude oil. The resolution further sought assistance from the government, which was asked to modify its development regulations on Indian lands and public domain.

The resolution was worded to include both new field development and settled production.

This committee was named at the meeting in Tulsa last year for this purpose "to formulate and recommend a program of legislation, federal and state, to be advocated by the Institute, giving sanction and effect to agreements by oil producers and for the curtailment of production in pools where, and during periods when there is overproduction, having for their purpose the economical and orderly production of oil."

Since last year the committee has met several times, its report submitted here Monday and adopted that night reads:

Suggest Law

"The committee believes that the purpose of the resolution would be accomplished if the oil producing States, especially at this time, California, Oklahoma and Texas, would pass a simple enactment, reading after proper caption and enacting clause as follows:

"It shall be lawful for operators or others at interest to make agreements whereby the production of crude petroleum is diminished or postponed during periods of over-production and actual or economic waste, and justification for such agreements shall be deemed conclusive when and so long as the production of crude petroleum in the pool or pools affected exceeds available transportation facilities, or when and so long as, of crude petroleum, the production in the United States, together with imports exceeds consumption in and exports from the United States.

"And the committee believes that the federal government should be requested to enact similarly, that

"It shall be lawful for operators or others at interest to make agreements whereby the production of crude petroleum which moves or is to move in commerce, as defined in the act of October 15, 1914 (38, Statute L730) is diminished or postponed during periods of overproduction and actual or economic waste, and justification for such agreements shall be deemed conclusive when and so long as the production of crude petroleum in the pool or pools affected exceeds available transportation facilities, or when and so long as, of crude petroleum, the production in the United States, together with imports, exceeds consumption in and exports from the United States.

"The federal congress also should be requested, the committee thinks, to modify the present statutes governing the leasing of Indian lands and the public domain for oil and gas, so as to give the Secretary of the Interior power, in his discretion to relax drilling obligations during the periods of overproduction and to withhold Indian lands at such times."

This report was indorsed by the whole committee, except that Staford Smith, who took the place of A. L. Weil, did not accede to the paragraph asking for federal legislation. Other members of this committee were Amos L. Beaty, The Texas Company, chairman; James A. Veasey, Carter Oil Company; C. B. Ames of Oklahoma City, John C. Townes, Humble Oil & Refining Company; Axtel J. Byles, Tidewater Oil Company, and F. C. Proctor of Houston.

Another resolution put the industry on a program of fostering the development of other markets for petroleum products. The following resolution on this was adopted by the board:

Develop Markets

"Resolved that the Board of Directors of the American Petroleum Institute has full faith in the ability of the oil industry to meet the growing demand for oil for domestic house heating purposes. The experience of the last generation, plus the best forecast

which science can make for the coming generations, justifies such faith.

"The modern domestic oil burner gives a kind of household heating service which gas alone has supplied in the past, and in the country as a whole it gives that service cheaper. It is our belief that oil heating will not only supplant gas, which is its present sole competitor, but, like the gasoline automobile, establish a new standard of American home life and fix a level of comfort and convenience never before attained by any civilization, and at a price well below the limit of its economic value for that use."

New Departments

The creation of new divisions, one on production engineering and one on refining technology, was promised when the board accepted recommendations and named a committee to consider these recommendations and report back at this meeting. This committee is composed of Wallace Pratt, Humble Oil and Refining Company; R. W. Stewart, Standard Oil Company (Indiana); W. M. Davis, Phillips Petroleum Company; G. S. Davison, Gulf Refining Company, and K. R. Kingsbury, Standard Oil Company of California.

A further move of the division of standardization came to light in a plan to educate the users of equipment as to its use and care in the fields. Printed instructions have been provided for each type of equipment, so far adopted. This may be classed as a code of field practice on field use. Bulletins on this will be placed in the oil fields, to instruct field workers in proper methods of handling A. P. I. standardized equipment.

Final specifications on wire rope and manile cordage were adopted by the standardization committee on those produced. Other final specifications adopted by committees were on steel tanks and on working barrel parts. These must be ratified by the board of directors before final adoption by the Institute.

The committee on uniform accounting adopted a form of published income and surplus analysis, which will be presented to the board at this meeting.

Early registrations indicated an attendance in excess of 2000. All activities of the meeting are in the Stevens hotel.

Washington, D. C.—Elimination of wasteful overproduction and cut-throat price competition by co-operation between private developers of natural resources and regulation by the Government was advocated before the American Mining Congress convention in Washington last week by Sidney J. Jennings of New York, former president of the body.

"Public opinion seems to be reaffirming the conclusion that the development by private people of the bases of wealth produces the best results and promotes the greatest good," declared Mr. Jennings.

"The sale of products of natural resources, other than waterpower, is regulated by intense competitive effort to dispose of a superabundance of products. The sale of developed waterpower is more a matter of service than price, although it must be reasonable, so that those using developed waterpower can compete with those using power developed from other sources."

Reviewing problems confronting the development, taxation and sale of products of natural resources, Mr Jennings said there are two possibilities of unity. "If, instead of the intense competitive struggle to develop more and more these great sources of wealth, some form of coordination could be adopted by which only sufficient of the natural resources would be developed in time to supply the effective demand, there would result a more efficient use of the total products of the subsoil, although possibly some of the skim milk of these resources might have to be absorbed by the present generation instead of leaving it for use in the future," he declared.

"Investigation of prices obtained for oil products, coal and copper, much of which have been shipped abroad, shows that we have been dispossessing ourselves of natural resources in large measure for the benefit of other nations, at a price which will not permit of replacement when exhausted."

Mr. Jennings strongly opposed the government going into private business, but suggested that it might be possible that some form of co-operation between the private development of natural resources and the regulation by government of the wasteful over-production of materials, which results in a cut-throat conmpetition of prices, would result in a benefit to all.

"Each industry in its own association should carefully consider the problem of over production and cut-rate prices and see if waste cannot be eliminated by co-operation within itself, which in many instances can only be brought about by change in the present laws or by some new regulatory law of the federal government."

AMERICAN PETROLEUM INSTITUTE DIRECTORS NAMED

PRODUCTION GROUP

PACIFIC COAST: M. L. Requa, Petroleum Engineer, San Francisco.

ROCKY MOUNTAIN: B. B. Brooks, Consolidated Royalty Oil Company, Casper, Wyoming.

CENTRAL UNITED STATES: W. C. Franklin, Tidal Oil Company, Tulsa.
Frank Phillips, Phillips Petroleum Company, Bartlesville.
J. Edgar Pew, Sun Oil Company, Dallas.
H. V. Foster, Indian Territory Illuminating Oil Company, Bartlesville.

EASTERN UNITED STATES: O. D. Donnell, Ohio Oil Company, Findlay.

MANUFACTURING GROUP

PACIFIC COAST: E. W. Clark, Union Oil Company of California, Los Angeles.

ROCKY MOUNTAIN: T. A. Dines, Midwest Refining Company, Denver.

CENTRAL UNITED STATES: P. M. Miskell, Empire Refineries, Inc., Tulsa.
John L. Gray, Shaffer Oil & Refining Company, Tulsa.

EASTERN UNITED STATES: Charles L. Suhr, Pennzoil Company, Oil City.

DISTRIBUTION GROUP

ROCKY MOUNTAIN: E. T. Wilson, Continental Oil Company, Denver.

CENTRAL UNITED STATES: H. B. Earhart, White Star Refining Company, Detroit.

EASTERN UNITED STATES: A. P. Coombe, Standard Oil Company of Ohio, Cleveland.

TRANSPORTATION GROUP

TANK CARS:
L. J. Drake, Union Tank Car Company, Chicago.

NATURAL GAS GROUP

N. C. McGowan, Palmer Corporation, Shreveport.

NATURAL GASOLINE GROUP

D. E. Buchanan, Chestnut & Smith Corporation, Tulsa.

FOREIGN TRADE GROUP

Herbert L. Pratt, Standard Oil Company of New York, New York.

E. L. Doheny, Pan-American Petroleum Company, Los Angeles.

AT LARGE GROUP:

J. F. Lucey, Lucey Petroleum Company, Dallas.
G. H. Jones, Standard Oil Company of New Jersey, New York.
Wallace E. Pratt, Humble Oil & Refining Company, Houston.
T. A. O'Donnell, California Petroleum Corporation, Los Angeles.
W. N. Davis, Phillips Petroleum Company, Bartlesville.
E. B. Reeser, Barnsdall Corporation, Tulsa.
H. F. Sinclair, Sinclair Consolidated Oil Corporation, New York.
George S. Davison, Gulf Oil Corporation, Pittsburgh.
I. W. Van Dyke, Atlantic Refining Company, Philadelphia.
H. L. Doherty, H. L. Doherty & Company, New York.
R. C. Holmes, The Texas Company, New York.

What Is Waste in This Business? What Is Conservation?

Address delivered before opening session of the Eighth Annual Meeting of the American Petroleum Institute, Chicago, December 6

By E. W. CLARK,
President American Petroleum Institute

IT is of no particular importance whatever that I was born in New Hampshire amongst the granite hills at the base of the White Mountains, except that the atmosphere of that rigorous area was conducive to a proper and logical interpretation of two very much over-worked words—waste and conservation—which recently have been recklessly and promiscously applied to production of petroleum.

It was difficult back in early days in our home to wrest a proper and comfortable living from the thin soils of my native State, and this made it imperative that everything should be strictly conserved and absolutely nothing wasted; therefore, I believe I should know something about proper conservation—we used the term "forehanded" in my boyhood days—also that I should have a fair measure of what waste means as applied generally, but in connection with our business I must confess to some confusion.

What is waste in the oil business?

What is conservation?

I have made a study of these two terms as applied to the manner in which the petroleum industry is conducting its exploration and production operations. Some of our critics possibly have some inkling as to what one or both of the words really mean, but generally speaking, most of them do not know any more than I about a proper interpretation of the two terms; and my conclusion, supplemented by studies made by competent attorneys, capable engineers and other technical men, leads me to believe that a proper and complete definition of either one is an impossibility. What is apparently conservation in some cases is in fact profligate waste in others, and vice versa.

Today attention is being called to the need for conservation. Strong appeals are being made from several quarters to arrive at the desired destination by writing upon the statute books measures enforcing conservation and prohibiting waste.

I believe the statements I have made with reference to the interpretation and application of the two words—waste and conservation—should convince you that such legislation would result in confusion, chaos and endless litigation.

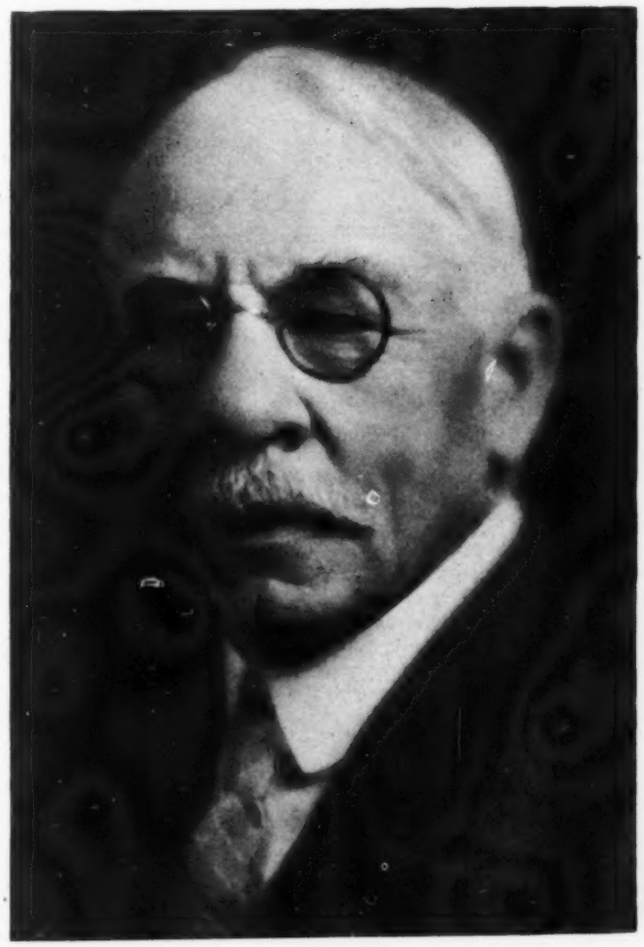
History of Conservation Movement

The history of the conservation movement dates back several years before President Coolidge appointed the Federal Oil Conservation Board in December, 1924.

Mr. M. L. Requa, General Director of the Oil Division of the United States Fuel Administration during the war, in an address before the National Petroleum Congress in March, 1919, stressed the need for bringing a higher degree of oversight and efficiency into the industry.

On October 7, 1924, Mr. George Otis Smith, of the United States Geological Survey, sounded a note against wastefulness and unco-ordinated effort on the part of the oil industry in the production of oil. He invited co-operation between the industry and the property owner and also between industry and the government.

Later in October of the same year Mr. D. M. Folsom, then of the General Petroleum Corporation, and Mr. C. R. McCollom, of Union Oil Company of California, at a meeting of the Chamber of Mines and Oil in Los Angeles, both stressed the necessity for better engineering practice in oil recovery and pointed out the wisdom of co-ordinated action in the direction indicated by Mr. Smith.



E. W. CLARK

Mr. Henry L. Doherty in the same year suggested a plan of co-operative control of new oil fields. His plan appeared idealistic and unworkable. Nevertheless, we must admit that today the principles laid down by these gentlemen, Requa, Smith, Folsom, McCollom and Doherty, are receiving serious consideration of some of the best minds in the industry.

In consequence of the creation by the president of the United States of the Federal Oil Conservation Board, appointed for the purpose of making a study of the nation's future supply of petroleum, a "Committee of Eleven" was named from the membership of the American Petroleum Institute, who in March, 1925, formulated a report which was published in August of that year, entitled "American Petroleum—Supply and Demand."

The main criticism of the "Committee of Eleven" report on supply seems to have been that the amount of oil stated to be available to the nation was grossly overestimated.

Report Vindicated

I believe that the major part of the report on supply

as it stands has, within the short period of two years, been thoroughly and entirely vindicated. While I realize a prediction is always dangerous, I venture the assertion that the time is coming when the work of the technical men who prepared the figures for this report will be fully appreciated, and the statement may be truthfully made that in view of the information and light they had on the subject at that time the estimate on supply was not very much short of an inspiration.

In January, 1925, the American Petroleum Institute adopted a resolution to the effect that under the then existing customs and practices of the industry there was no appreciable or avoidable waste.

The directors of the American Petroleum Institute were right in January, 1925.

Since that date we have had some wonderful experiences and the advent of the technical man has shown us how little we knew in 1925, and that new knowledge is sufficient to indicate how little we know today of the real function of gas as it exists in the ground with oil, and how much there is yet to be developed regarding the proper method of production thereof.

After a period of investigation of the facts, the Federal Oil Conservation Board, in its preliminary report of September, 1926, invited the industry to concentrate its thought and attention upon two great general principles; one in respect to the development of co-operation, and the other in respect to the use of gas, or energy as it is sometimes put, in producing oil. The report was a friendly challenge to us to attack these old problems in a purely constructive spirit. We had the choice of saying that we believed these problems insoluble, and therefore declined to waste time considering them; or, with open and constructive minds, to indicate our willingness to re-examine them and to ascertain whether there is a practical and workable answer. I believe that everyone must concede that we owed it to the public and to the industry to accept this challenge in the spirit in which it was given, and to bend every endeavor to bring about a constructive answer.

Activities of Board

The activities of the Federal Oil Conservation Board during the three years of its existence have focused the attention of the oil industry, as never before, upon the fundamental practices of the industry. There has been the greatest period of self-examination and self-challenge in the history of this great industry. In the end it will be found that this self-examination and self-challenge will all be to the good.

At the annual meeting of the American Petroleum Institute at Tulsa last year resolutions covering the use of gas in oil production and the development of co-operation were adopted by the board of directors. I shall refer first to the more difficult problem, viz., that pertaining to the use of gas.

The Federal Oil Conservation Board declared that the prevention of waste of gas was of paramount importance in the production of oil. This was a declaration of a principle. It was not a committal to measures whereby that principle could be carried into effect. The Conservation Board recognized the difficulties inhering in this problem.

At the Tulsa meeting of the Institute in 1926 the board of directors of the American Petroleum Institute formally agreed to that principle. The directors recognized that, without measures to carry the principle into effect, adherence to the principle would produce no practical advance. Therefore, the board of directors appointed a committee, of which Mr. Marland is chairman, to devise, if possible, and to recommend to the board measures whereby the principles could be carried into effect.

Specifically, a measure in the sense used in the resolution is a rule of action in respect to producing practice.

The Problem of Conservation

It was perfectly clear then—and if it was not, it is perfectly clear now after a year's experience in that matter—that this committee was assigned a problem of the greatest complexity.

The real problem of oil conservation is whether a practical and equitable rule defining good practice in producing oil can be adopted.

The practical issue is whether we can develop the facts and the art of producing oil to the point where we can evolve new rules of neighborly conduct.

The committee of which Mr. Marland is chairman attacked the problem with vigor and intelligence; has carried on prolonged investigations; has sought and received the best technical, legal and practical advice available. It has searched the four corners of the industry, and gone outside of it; and has concentrated its attention upon the specific question whether a new rule of producing practice—practicable, just and constitutional—can be evolved.

We start with the fundamental fact that nature did not store our oil resources in glass pockets, in order that they might be seen.

Had nature been indulgent she would have put the oil in nice little compartments corresponding with the fences on each man's land.

Many years ago a court laid down what at that time was the only practicable rule, viz., let each take what he can get from the holes he drills on his own ground. Let each man's protection against his neighbor lie in his own diligence. This rule has never been changed and is still in force.

There is nothing new to oil men in these statements.

Everything said about waste, overproduction, price fluctuations, unnecessary drilling, conservation, "regulation," and "control" has its genesis in the fact that each individual oil producer has been compelled by the very nature of his undertaking, and the court's decision as above referred to, to go it alone.

In every industry there are problems that relate to the **conditions** under which the law of supply and demand shall operate. Our problem relates not primarily to the law of supply and demand, but to the conditions under which it operates.

Were there any lack of willingness or eagerness, if you please, on the part of the members of the Marland committee and the American Petroleum Institute, or of the members of the industry itself; were there any lack of diligence or intelligence on the part of the committee; were there any inclination to be recalcitrant, obstructive; were there the faintest desire to disregard the public interest—the case would be entirely different.

Until the oil producers, by and large, are able to reach a common understanding, representing some advance over previous practices; until the persons who must go out, find the oil, and produce it, succeed in reaching a common understanding as to changes in methods under which they can operate—it is perfectly clear that no one, no matter how wise, will be able in a mere bill to change the habits and customs of an industry founded not upon theory, but upon facts and necessity.

If, however, proposals of an impractical nature or in violation of the principles which the industry has been compelled to follow are suggested, our answer to them is not as difficult as it may seem to some. In fact, it will be found—once legislative committees get away from generalization; get away from the obvious disadvantages recited above of the rule of conduct which we have been compelled to follow, and address themselves to the concrete problem (which they must do at some stage in their proceeding)—that we shall have only to lay before these committees the record of our struggle with the facts. In thinking of the various proposals for regulation and control, we can too easily take counsel of our fears; we can too easily forget that the law-making bodies of the United States, on the whole, are made up of sound-thinking, practical-minded men—men who before they act must do what we are compelled to do: face the facts as they are.

Under Fog

This whole problem of conservation has been proceeding under clouds and fogs of generalization. The time has arrived when advocates of action owe it to themselves and to the industry to cease generalization and g e n e r a l charges, and to be clear and concrete in respect to the remedies which they propose.

(Continued on page 40)

Conservation of Gas: How Shall We Attain It?

An open letter addressed to the members of the Board of Directors of the American Petroleum Institute

By MAX W. BALL,
Denver, Colorado

THE attention of the oil industry has been focused upon the necessity of conserving oil field gas, and utilizing it in producing the greatest possible amount of oil at the lowest possible cost. Science and experience have shown that in most fields gas dissolved in oil not only propels the oil to the well, as has long been recognized, but also lowers its viscosity and surface tension, increases its fluidity, and facilitates its passage through the pore spaces of the reservoir rock to the well. They have shown that lowered gas pressure means an oil harder to move with less force to move it; that gas wasted means oil unrecovered and unrecoverable. The value of gas as an energy is seen to exceed its value as a fuel.

The Federal Oil Conservation Board and the Committee of Seven of the American Petroleum Institute have emphasized the working value of gas in producing oil and the folly of permitting it to escape without doing its full share of such work. The maintenance of maximum gas efficiency—by back-pressuring, stop-cocking, or even re-pressuring—is coming to be recognized as standard practice. The importance of gas conservation seems to be in the mind and on the lips of every thoughtful operator.

Side by side with this recognition has grown the realization that the worst enemy of gas conservation is the piecemeal, competitive operation of the individual field. The maintenance of pressure is in most fields useless, if not impossible, unless applied to the whole field at the same time. Scientific knowledge and practical experience have joined in pointing out that gas conservation and the unit operation of each field go hand in hand.

At the Ponca City meeting of the Committee of Seven, on October 17 to 19, 1927, four technical sub-committees representing, respectively, California, the Gulf Coast, the Mid-Continent, and the Rocky Mountain region, and made up of most of the leading production engineers and some of the leading scientists of the United States, answered with virtual unanimity the three questions that had been propounded to them six weeks earlier, in substance as follows:

1. The conservation of gas is of paramount importance in the conservation and economical production of oil.

2. Improvement of production methods should be made the subject of special study for each field, each lease, and each well. No single production rule should be laid down for universal application, from which it follows that no present known practice should be crystallized into law.

3. Unit operation of each field is the ideal operating condition, and wherever unit operation can be brought about, whether by pooling or co-operation, proper production methods will inevitably follow.

So generally are these facts now recognized that men no longer ask, "Is gas conservation desirable?" Instead they ask, "How can we attain gas conservation?" How can the industry protect itself against the irresponsible operator who will not conserve his gas? How can unit operation be made the general, and ultimately the universal, rule?"

Three Schools of Thought

In answering these questions sharp differences of opinion have manifested themselves and three diverse schools of thought have developed. One would solve the problem solely by education and co-operation, bringing about unit operation of fields and the conservation of gas by mutual arrangement, resisting all attempts at legislation, and not invoking the aid of the courts. A second would likewise encourage co-operation and resist legislation, but would place its main reliance on building up a body of judicial laws which would recognize that the man who wastes his gas does his neighbor irreparable damage. A third would encourage co-operation and accept judicial aid if it becomes available, but would place its main, if not almost sole reliance, on the invocation of the police powers of the States, through State legislation prohibiting improper practices.

The proponents of these three schools of thought are carrying forward their arguments vigorously, and there is danger that the object to be attained may be lost sight of in a debate over how to attain it. It would be unfortunate if dispute over the best method of doing a desirable thing should prevent us from attempting to do that thing at all. This letter is written in the belief that the three schools of thought are not incompatible, that no one method should be adopted to the exclusion of the others, and that every means likely to hasten universal gas conservation should be adopted.

In the first place, every effort should be made to encourage the bringing about of unit operation through mutual agreement. Despite the difficulties that have been so strongly stressed, and despite the cases where no such agreement can be reached, there must still remain a great many cases where a sincere effort will bring about the unit plan.

Such unit operations are already working in a number of fields in the United States. That more of them are not working is due chiefly to the fact that the industry has never before been awake to their importance, and has never put its mind to bringing them about.

Many of the objections raised are based on failure fully to comprehend the magnitude of the advantages to be gained. If the production of Tonkawa, for example, would have been increased 60 per cent or more by unit operation, and it probably would, the owners of the leases east of the fault line could have been paid their proportion of the production based on acreage, and the operators west of the fault line would still have gained. Or again, the operators of the narrow oil belt in Lance Creek could well have afforded to divide their proceeds on an acreage basis with the owners of the wide gas area on top of the structure; the additional oil production would have been great enough, no doubt, to permit such a distribution with profit to all concerned.

As for the land owners, here, as with the operators, the problem is one of education. Once the land owner realizes that greater average production is obtained by unit operation than by competition, he will be more than willing to join in a pooling arrangement. In fact, once he comes to full realization of all the advantages, he is likely to insist on unit operation. Certain companies are having no difficulty in taking long-term leases in exchange for stock, on the basis that the land owner has a better chance with a small interest in many leases scattered over several States than with a much larger royalty on his own land. If this idea can be so successfully sold to the farmer, the simpler and sounder idea of unit operation should not be difficult to sell.

Can Bring About Unit Operation

It is impossible to believe that if the oil industry sets its hand to the task of bringing about unit operation it can fail to achieve its purpose in the great majority of cases.

There will remain, of course, some cases in which, for one reason or other, mutual agreement will fail to bring about complete unit operation; cases where the man who wants to capitalize his nuisance value, or the man who expects to make

his money from promotion rather than production, will refuse to co-operate. Such a man should not be allowed to indulge himself, and force others to indulge, in wasteful practices. To govern him, two courses are possible: first, to seek the aid of the courts, and second, to seek the aid of the police power.

The courts have usually shown themselves willing to modify judicial law whenever new facts, or a new understanding of the facts, or even a new attitude toward the facts, is presented to them. Witness, for example, the changes in the trend of federal decisions regarding the anti-trust laws. The body of judicial law holding that oil and gas are the property of him who captures them may be modified when operators and land owners present to the courts, as they surely will, evidence showing that the man who wastes his gas is depriving his neighbor of that which not enriches him and leaves his neighbor poor indeed. Is it not entirely possible that the courts will award damages to the injured neighbor, and even enjoin the offending operator? If and when this comes to pass the cause of conservation will be immeasurably advanced.

If we only had years in which to correct the present evils we could rely solely on these remedies of education, co-operation, and judicial decision; but the ills of wasteful operation are unfortunately too swift and too serious to permit the patient pursuit of what might otherwise be the wisest course. In order, before too much damage is done, to hasten the curative powers of our other remedies, we may do well to consider invoking further the police power of the States.

If we apply our other remedies diligently and sincerely this power need be exercised only on rare occasions. Its main value would lie in the knowledge that it is ready to hand and can be used if necessary.

Neither need this invocation of police power take the form of definite prescription or prohibition of practices; it should under no circumstances attempt to define proper operating methods. It should go no further than prohibiting wasteful operation, leaving the definition of improper operation to a competent tribunal whose regulations could keep step with improving practice. The Wyoming law which requires the operator to follow the regulations of the United States Geological Survey, and the Colorado law which makes waste a crime, leaves the definition of waste and the promulgation of operating regulations to a committee selected from the oil industry by the governor, and provides for enforcement through the courts if necessary—these may be cited as excellent examples.

Much of the fear of regulatory legislation seems to be mainly fear of the type of legislation that may be enacted. Many oil men operating contentedly under the Wyoming and Colorado laws have expressed themselves as against legislation; they scarcely realize that they are already under regulatory statutes. When they think of legislation they visualize and dread a law in too definite and detailed a form. Probably all the operators who express themselves most strongly against regulatory legislation, and who fear that any invocation of police power would subject the industry to the dangers of nationalization, bureaucracy, and political domination, are already operating under regulatory State legislation. We cannot now decide whether the police power should be invoked—that power has already been invoked. Need we be too fearful about invoking it a little further?

Let us then content ourselves with nothing less than all our remedies—education, co-operation, judicial decision, and legislation; placing our main reliance in education and co-operation as the voluntary acts of a free and vigorous industry, accepting judicial aid whenever and wherever it becomes available, and keeping the police power ready for use when, and only when, our other remedies fail in promptness or effectiveness.

Gulf Coast Has 13 New Wells During Week

Houston—The Gulf Coast region during the week ending December 5 reported completion of two tests, an oil producer and a failure, in South Louisiana; and 15 tests in Coastal Texas, including 13 producers and two failures. The initial production was 8295 barrels, of which all but 150 barrels came from the Texas division of the area.

Spindle Top furnished three completions, including two producers of the Sun Oil Company which had a combined initial yield of over 5400 barrels; McLean 16, which flowed 2200 barrels from 5100 feet, and McLean 17, 3256 barrels from 5000 feet. Another completion at Spindle Top was J. O. Davis et al's Gladys 2, a semi-wildcat, which was abandoned at 5920 feet.

Associated Oil Company's Boyles 1 at Pierce Junction had an initial flow of 1760 barrels from 4450 feet.

Three tests were completed at Blue Ridge, two as producers and one as a failure. Gordon, Folwell and Dickson brought in Blakely 2 for an initial flow of 500 barrels from 2750 feet, and Navarro Oil Company's Robinson B-1, which had been deepened, began flowing 500 barrels of fluid but was making 80 per cent water. Sam Watts et al's Blakely 1 was abandoned in salt at 2700 feet.

At Hull, Empire Gas and Fuel Company's Barngrover 27 was completed as a 125-barrel pumper at 3140 feet; and Gulf Production Company's Phoenix Development Company 1, after drilling deeper, made 70 barrels, two per cent water, on the pump.

Gulf Production Company completed two wells at Goose Creek as small pumpers after drilling them deeper, each coming in for 15 barrels. They were the Hoffman-Gaillard 14 and the Wright A-21, the respective depths of which were 2790 and 2650 feet.

Gulf's T. W. Davis 43, at Big Creek, came in for an initial flow of 250 barrels from 3600 feet, and Weldon Oil Company's Hooks 17, at Saratoga began pumping four barrels a day from 530 feet.

The completions in South Louisiana included the Rex Petroleum Company's Hunter 5 at Edgerly, which, after being deepened, began pumping at the rate of 150 barrels from the new depth of 4000 feet. In the Evangeline field the Evangeline Oil Company's Conklin 1 tested salt water at 1890 feet and was abandoned.

Houston—Yount-Lee Oil Company s amdhea ovF etaoinu n un un ununu has made a location for its School Lands 7, a new wildcat test in the Hackberry district, Cameron Parish, Louisiana. It is 1200 feet west of that company's No. 4 test, which was abandoned, and is near the center of Section 16.

Houston.—Humble Oil & Refining Company was hauling out material this week to its new location near Sugarland, in Fort Bend County. This test, which will be known as the Sugarland Industries 1, is located about five miles north of Smithers Lake and about 10 miles southeast of the town of Sugarland in the southwest corner of the William Stafford survey.

Bakersfield, Calif.—The Pacific Eastern Production Company's Union Avenue wildcat, which created such a stir several months ago, has settled down to nothing more than a drilling well. After a series of mechanical troubles, the well was put back in shape for deepening, but not until after it was definitely proven that nothing of importance could be expected of it at the old depth of 4393 feet. Two strings of casing collapsed in the well and it is considered miraculous that both were repaired. The company succeeded in going through the gas sand and is now drilling below 4600 feet.

Bakersfield, Calif.—North Poso Creek is attracting much attention as the result of the discovery of streaks of promising oil sand in the General Petroleum Corporation's Glide 1, section 21-27-28. Fair showings are reported at 1550 feet and still better indications were found below 1600 feet. The company has not made public its immediate program, but is now running a string of 11-inch casing, which will be cemented near the 1550-foot level. The showings found were not greatly unlike those encountered in the company's wildcat test near Edison. North Poso Creek is in the same general area as Round Mountain, Kern River, Mt. Poso and Edison and would probably produce about the same grade of heavy crude.

Bakersfield, Calif.—The Bakersfield area, which has been closely watched and extensively leased since the Pacific Eastern Production Company encountered a huge pocket of gas several months ago, is coming in for additional tests. James O'Donnell, well known wildcat operator, will drill a test on the northeast quarter of section 7-30-28 as soon as the necessary equipment is assembled. The new well will be located near the Pacific Eastern well and just south of the city limits.

Advantages of Standardized Rigs, Derricks and Rig Irons

Paper read before Standardization Division, American Petroleum Institute, Chicago, December 5 to 8, 1927

By C. D. WATSON
The Carter Oil Company

THE story of the derrick is almost a story of the industry itself. It has been the symbol of petroleum since the drilling of the Drake well and perhaps no other single apparatus has been depended upon to perform so many difficult tasks, unless it be the derrick's companion—rig irons. These two have been the primary tools of the industry and they have performed their tasks well.

It is not the purpose of this discussion to go into a chronological history of the evolution of the derrick and rig irons but to properly approach the point at which the American Petroleum Institute undertook to sponsor their standardization, it may be interesting to recall a few of the high points in their transition.

While rigs and irons are integral in their performance, due to the fact that the two have been treated separately by the Standardization Committee of the A. P. I., it is therefore more convenient that they be so discussed here.

The early derricks of course were all of wood construction, this being the most common and cheapest material available. The type and size of these varied widely, depending upon the individual ideas and requirements of the particular operator. This type of derrick was used almost entirely until late in the 90s, and along about this time, the manufacturers of steel towers and steel equipment became interested in the possible field for steel in the construction of drilling and pumping derricks. Several designs were patented in the late 90's and early 1900. It was probably 1903 when the use of steel derricks for pumping wells became noticeable. However, it was as early as 1907 that the first all steel drilling rig was built and sold by the Carnegie Steel Company. I have not been able to get an opinion from any of the oldtimers as to the efficiency and adaptability of these first steel rigs, but they evidently were to be improved upon since it was some years later before a definite trend toward steel and combination wood and steel derricks made itself felt in the industry. Even as late as 1922, a steel drilling derrick was a rare sight in many new fields. However, long before this time, steel pumping derricks had become quite common.

With the advent and more common use of the rotary system of drilling, a type of derrick was developed which is commonly called a combination derrick, or turnbuckle derrick, which employs wooden legs with steel girts and braces. This type was a considerable improvement over the old all-wood derrick, inasmuch as the wood legs provided an elasticity which was supposed to be necessary during the drilling operation, and at the same time, the steel girts and braces tied in the wood members in a very satisfactory manner.

It was along about this time that the tubular steel derrick, the angle iron derrick and the combination derrick were coming into common use in the field as drilling derricks, both in the rotary and standard cable tool types. At the present time, the all-wood derricks is fast falling into the minority because of its low salvage value and limited durability as compared with steel. In the recently developed Seminole field, of over 1200 drilling derricks, there were only 27 all-wood derricks used, the balance being of all steel and combination steel and wood construction.

In 1924, the A. P. I. Standardization Division had made considerable progress with the work of standardizing tubular goods and a committee was organized to effect, if possible, a standard for rigs and derricks, realizing that from the great number of types and sizes of derricks manufactured, interchangeability was impossible, and that it was highly desirable from an economical standpoint to have dimensional standards. This committee, composed of practically all of the manufacturers of rigs and derricks, a large number of operators and engineers, first started the work by checking the present types of derricks and found that there were between two and three hundred of these, few of which were of any common dimensions, and few of the manufacturers had any definite idea of what load capacity, tensile strength or wind velocity their particular derrick would withstand. They seemed to have merely built a derrick that was supposed to be heavy enough to do the job and if it would not, the remedy lay in the addition of material where the last break came. After several years of intensive work and study, both technical and practical, the committee has compiled a complete set of specifications for rigs and derricks which call for 12 standard sizes of derricks, designed to suit the needs of operators in all parts of the United States. This, it will be noted, is a most considerable reduction from the some two or three hundred sizes and types previously had.

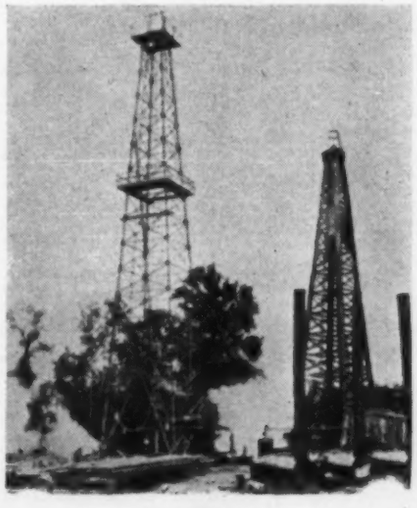


FIGURE 1
Old type 84-foot derrick gives way to the 122-foot all steel tubular rotary driller.

Standard Base

Under this A. P. I. standardization program, derricks can be obtained in practically any desired height. They are provided with ample and uniform water table openings which permit an interchangeability of crown blocks, and which is a most important feature from the producer's standpoint. In this program there are two systems of derrick towers provided for, one having an interchangeability of the derricks on the same common foundation; in other words, all derricks of similar construction, such as steel or combination wood and steel, having for instance a 24 foot base, will fit on the same piers, using the same foundation bolts. For example, a 122-foot drilling derrick with a 24-foot base and 5-ft. 6-in. water table opening may be replaced with a 94 or 87 foot production or pumping derrick which also has a 24-foot base. This change may be made without any change in the foundation, or, as has been previously pointed out with this system of bases, a 20-foot base derrick can be erected independently within a 24-foot base derrick before the larger derrick is dismantled; this, however, necessitates additional foundations.

The other system provides for what

FIGURE 2
All Steel Angle Iron Type Derrick.

is commonly known as the standard taper derrick. This series of derricks has a fixed water table opening, the uniform taper of the legs making the base size variable, depending on the height. One manufacturer provides an opportunity for lowering the upper part of the standard taper drilling derrick inside the original derrick base on to a smaller base already provided, thereby making a shorter pumping derrick. The production derrick can then be salvaged and re-erected as the upper part of a taller drilling derrick. Then a similar test was made, using the A. P. I. standard sheaves of three different manufacturers. These were set in bearing boxes which were built to accommodate A. P. I. sheaves and then assembled in a common type crown block. The result was a complete assembly of all workable parts and showed that while there are many different types of crown blocks made having various kinds of bearings, methods of lubrication and nesting arrangement of sheaves, nevertheless there can be an interchangeability of dimensional parts when A. P. I. specifications are followed. In fact, the upper parts of all derricks, from the 73-foot pumper to the 122-foot drilling derrick are identical, using the same gin pole, water table beams and crow's nest; the platforms also are interchangeable. Such a system naturally makes for a reduction in warehouse stocks, both on the part of the manufacturer and the operator, as well as providing a uniform or common derrick for all purposes.

The derrick's dimensions such as height, size of base and size of water table opening have been made standard, as have also derrick accessories and standard rig parts. The location of the drill hole, for instance, has been fixed, which facilitates a uniform design in floor foundation as well as the location of drilling and pumping equipment. The dimensions and location of window openings have been specified. Recommendations have been made for concrete foundations, and a code on the use and care of rigs and derricks has been worked out.

Considerable time and effort have been devoted to the compilation of common formulae for the determining of the dead load capacity and the wind load capacity of the derrick. These have been found extremely necessary in order that the manufacturer may determine just what loads his derrick is capable of handling and also that the operator have this same information which enables him to determine ultimate load to which he can subject the derrick before failure of the derrick parts may be expected. All this information will be enumerated on a name-plate which will be attached to the derrick and which should better familiarize the driller and operator with what extreme loads, considering the safety factor, he may expect the derrick to withstand.

The advantages of being able to change from a drilling to a pumping derrick without having to change and rebuild the foundations are obvious. A pumping derrick of, for instance, 84 feet high and with a 24-foot base would cost a matter of $50.00 more than the same height derrick with a 20-foot base, and if this derrick were to replace a 24-foot base drilling derrick, it would be necessary to rebuild the foundation which might vary in cost from $100.00 to $300.00 or more, depending upon the location and kind of ground. This additional cost would be in addition to the time lost while

FIGURE 3
Combination or Turnbuckle Derrick.

waiting for the cement to set, whereas if the base of the two derricks are the same, the only time lost is for dismantling of the drilling derrick and the erection of the pumping derrick.

There should be many advantages gained by the men who erect the A. P. I. derricks in the field and by the drillers who are to use them, in that as previously mentioned, each derrick of a given type will be of the same dimensions and it should therefore be easy for the crew to familiarize themselves with the different parts without any difficulty.

(Continued on page 71)

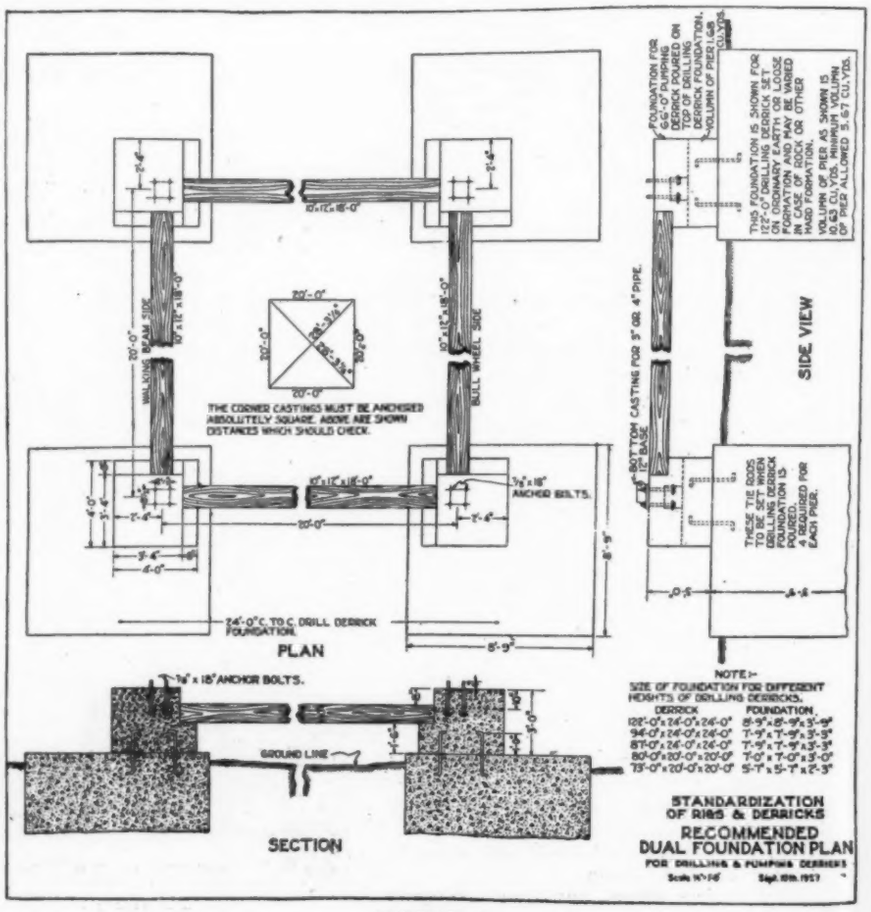

PLAN
SECTION
SIDE VIEW
THE CORNER CASTINGS MUST BE ANCHORED ABSOLUTELY SQUARE, ABOVE ARE SHOWN DISTANCES WHICH SHOULD CHECK.
24'-0" C. TO C. DRILL DERRICK FOUNDATION.
GROUND LINE
WALKING BEAM SIDE
BULL WHEEL SIDE
NOTE:-
SIZE OF FOUNDATION FOR DIFFERENT HEIGHTS OF DRILLING DERRICKS.
STANDARDIZATION OF RIGS & DERRICKS
RECOMMENDED DUAL FOUNDATION PLAN
FOR DRILLING & PUMPING DERRICKS

FIGURE 4

Men Most Important in Handling Motor Truck Equipment

Paper read before American Petroleum Institute Eighth Annual Meeting, at Chicago, December 5-6-7-8, 1927

By ROY F. FIKE
Mid-Continent Petroleum Corporation

TO tackle this assignment is like diving down into the ocean and tackling an octopus, with its many arms, all about of the same strength and importance, open to receive you and all of them leading to the main body or issue. Every man who has had the formation of a motor vehicle department placed in his charge, now understands just what a responsibility he tackled; especially if it was composed of cars and trucks of all sizes as well as tractors and other automotive equipment scattered over the country and previously operated and controlled by numerous department heads, each operated after his own plan and no two alike. This, however, is generally the condition and it is due to this condition, that you were called into the picture; like others, we found our problems to be of this general type.

The handling of trucks, from a fundamental standpoint, does not differ from the handling of cars or other equipment and what I have to say hereafter will have to deal with the whole subject rather than any particular unit. I must talk from the practical viewpoint rather than the technical, as my activities have brought me in contact with practical operations rather than technical.

A number of companies have many more pieces of equipment than have we. This does not change the basic principles of operation whether there are few or thousands. Every business, department of a business, and unit of a department, has the same basic principles and according to our thought they come in the following order:

(1) The analysis of the job.
(2) The plan of its operation.
(3) The organization of the work.
(4) The handling of the help.
(5) The conserving and caring for the records.

Take the small shack or the immense steel structure, the peanut business or the largest industrial plant, the same fundamentals hold good if that business is successful. This is proven by the fact that a number of our largest merchants and industrial institutions have grown from the shack or peanut business. The Chinaman, Negro, Indian, or other races, are identical under the skin. All have the same vital organs and the human, like the business, differs only in the way you dress it, rather than as to the underlying principles.

The automobile and truck manufacturers of today are the survival of the fittest, as puplic opinion has sat in the judge's chair for the past 25 years and watched some 550 makes and makers disappear, the 50 remaining have passed the board of censorship and to my way of thinking, are all good. I believe the manufacturers are doing their part better than we, as, when we show them their weaknesses, they set about to correct them. They have their engineers working all the time on improvements, tests are constantly taking place, and still we are not doing our part. This is applicable to most operators of equipment fleets.

Man at the Wheel

The one outstanding universal need, as I see it, is the development of the "man behind the wheel." No manufacturer of cars or trucks can survive who does not build a good motor. Every car needs two motors, according to my belief; namely, a mechanical motor and a human motor, one developing "horse power," the other—"horse sense." We are all criticising the manufacturers, when, as a matter of fact, when we look behind the steering wheel instead of under the hood, we find our greatest expense and difficulties. Who of you have not seen carelessness and abuse in every small town or city you have visited, by some grocery, laundry, bakery, or other business delivery wagon boy who did not care? How much greater must be our abuses and losses on our expensive equipment, out in the oil fields where roads are soon nothing but quagmires and where, in the mad rush for liquid gold, money loses its value. Huw much more necessary is it for us to give special attention to the proper education of our drivers, due to this condition, than for the small merchants. We must expect in the production field, at least during the early stages of development, some waste as everybody must work under great handicaps. Getting the wells drilled in as soon as possible is the consideration that takes precedence over all else.

Another factor we are facing in all new developments is roads. These are never better than dirt to start with and after one week of use by thousands of these trucks, tractors, and wagons, they are just ruts and holes and no one can afford to stop, day or night, to fix them. So, all the time these thousands of tons of materials and equipment are being rushed in, abuse and damage of equipment goes on. This is what we can term necessary waste or expense.

However, the worst feature of the whole operation is the fact that these men on trucks or cars, working night and day, in the dust, mud, and grease, become imbued with the rush and flush production methods and after things get back to normal, they are still operating their equipment without a thought of care, and this is where the reatest saving can be effected by us. This is applicable to all of the equipment used during the flush production period.

The Seminole development is one of the greatest, if not the greatest, of this generation, and if it were possible for you to look at the seething mass of humanity and equipment, three and four lines of traffic abreast, miles long, jamming against each other, moving an inch or a few feet at a time, with hardly a time that any two wheels are on the same level, with trailers attached to trucks, loads boomed tight, with long eight-wheel wagons with as high as 20 teams to a wagon, loaded with every pound they can budge and, besides, thousands of small cars mingled with this mass and taking hours to move a mile, you have just a small glimpse of the true picture. In these cases, if a truck, car, or team has an accident, which does happen every day under the extreme conditions, a winch line is attached to it and it is left on the side of the road. Klondike at its height was a mild show in comparison. So, I say that under these conditions men are sure to get the habit of waste as all are instructed to get to the location with all possible speed. Even with it all, a world of credit is due these truck drivers and teamsters as all material must be moved by them, railroads being able to handle only a small part of the tonnage and then, at best, only part way. The location must be made by the truck or team.

Develops Men

However well you and I may understand these conditions, at the close of

each year, the cost sheet is the final answer to the executives, excuses have no place in these reports and we may just as well work out a plan to take care of and improve this condition. With all companies facing the same problems, either in the field of production, marketing, or other activity, the thing we must do is to develop our men.

Another item in which we all have thousands of dollars invested and which is constantly being replaced, is tires. I have come to believe these manufacturers are right in their arguments and am taking their view point in dealing with our tire situation as, after studying our troubles, I find 90 per cent of them are due to under-inflation and abuse. We have started a vigorous campaign on these items and if we can get our car and truck operators to properly use the most free of God's gifts—air—thousands of dollars will be saved. It is a peculiar thing how true some of the old sayings are—for instance, "If it doesn't cost anything it isn't worth anything." I think this is particularly applicable to the operation of automobiles as air and water are two of the most essential factors and the hardest to get our drivers to use, and in 90 per cent of the cases, they don't even have to get out of their cars at our modern filling stations. Another thing, I am almost willing to wager that none of you men have had to issue a bulletin to your drivers warning them concerning filling their gas tanks. An old maxim says "The constant dripping of water weareth away stone," but unfortunately, there is no information on what the effect is on solid ivory.

Tell Men Costs

I am a firm believer in constant contact with all operators, either personal or by letters and bulletins, and I have tried to build up, from the starting of our department, a contact which would really mean something to each operator and every month every car or truck operator is written, showing him the expense of operating his equipment for the month and for the year up to that time. Our experience has proven that men in each locality compare these costs and try to operate their equipment as economically as the other men operating like equipment. In this same letter, we try to show whether or not he is doing as well as other operators and a great saving is being effected in this manner.

This is why I believe that an association like the Petroleum Motor Transport Association, (whose plan I will outline later) can accomplish more than the A. P. I., as we get together every two weeks, talk over our ideas, and take action, while with a national organization, you meet once a year and from that time on, everything is done by letter. It is my thought that if a number of organizations like our little association were formed and all report their activities regularly to the A. P. I. or similar head, that a national good could be accomplished. I believe the greatest need is for each locality or business or branch of a business to solve its own problems and through these local associations, take definite action and report to the national head. It seems to me that most of the national organizations have a set-up similar to this.

Now, just a word in connection with the Petroleum Motor Transport Association of Oklahoma and its activities. This Association was formed in Tulsa less than a year ago. Its membership is composed of motor transportation men of petroleum or oil companies exclusively. All our problems are the same and a big saving has accrued to all affiliated companies. We adopted a diamond shaped emblem in the beginning, with P. M. T. A. worked into it, and a uniform bulletin of its use and purpose was worked out. All companies sent the bulletins or instructions to their car operators, together with emblems. These were placed on the radiators of all company cars and like magic, conditions throughout the field changed. Truck drivers who used to be cursing each other all had received the same instruction. They all knew that there was a desire for co-operation with all the other companies bearing this emblem and instead of cursing or crowding you off of the road, a salute or extension of road courtesy was extended after the distribution of these emblems. The instructions set forth that in case of trouble, you could stop any car with the emblem on it, and get whatever assistance was practical for it to do for you, without any charge. This eliminated some abuses practiced by unscrupulous drivers who, when the rain came, would charge one or two dollars to help you out of the mudhole and some drivers did real well at this. Some very interesting stories of co-operation have been related in connection with this emblem. Then, again, we find that the trucks and teaming contractors issue instructions to their men never to pass up a truck or car bearing this emblem and never to make a charge for any courtesy exended.

Standards

Another thing we have standardized on, is the truck and teaming contractor's rate of pay, load and mileage which constitutes a team day and a saving of one-eighth is the net result and by the way, the contractors are perfectly satisfied as they now know before they start what the rate is and it eliminates the "Pay Off" which we have heard did exist.

This Association has a number of other standardization plans, also plans for the education of truck and car operators. We realize our big problem is educating the truck driver and we are laying the foundation by adopting the emblem, the standard team load, and standard tool equipment as means to an end. We are getting the drivers to consider the other fellow and now we are going to get them to consider their equipment. I want to say that my experience has been that there is a noticeable change in my truck drivers' care of their equipment, due, I believe, in a measure, to their seeing other companies' equipment with a shining radiator and a neater general appearance. We members are all sending out a uniform letter in our educational campaign and are going to hold examinations after a series of letters have been sent out, and also make examinations of the equipment in the field—all with the view of showing our men that we are taking seriously the information we are passing on to them.

In closing, I wish to say, if I were asked what we might do in a national way, my first answer would be: Educate the man behind the wheel as to the proper handling and care of his equipment;

Second—Standardization through the city, county, state, nation, or other political subdivision on road laws as to signals, turning, backing, or otherwise changing course, also as to speed laws, stop signs, parking rules, time limits, and the like. There is no such thing as "It can't be done." If you will analyze the railroads you will find that whether you are on the east coast or the west coast or some intermediate point, the same system of rules govern and control. Here we are with a mounting death list, accidents by the thousands, destruction of property mounting into the millions, and no national legislation being actively urged or demanded which would prevent this wholesale slaughter of the innocent. Of course, this perhaps would not be such a good vote getter as a political issue but what senator or representative would dare to take a stand against its importance.

Third—The many things which we can standardize in the manner of our equipment, speed, signals, and even wages, are the important issues to my mind, always realizing nothing is accomplished with "can't" in it. This element must always be taken out of successful accomplishments. In meetings of this kind, "excuses" are the answer for "nothing accomplished."

Salt Creek Litigation Terminated

Casper, Wyo.—Probably the last of the long string of title suits involving Salt Creek acreage was disposed of with the final decision in favor of the defendant in the United States Circuit Court of Appeals suit of Henry A. Miller vs. the Consolidated Royalty Oil Company et al. This is one of several cases involving old titles in the field, which are known as the Ivor Johnson chain of titles, contested for years by various claimants. All of the other cases have previously been decided in favor of Ivor Johnson, who had sold his claims to Consolidated Royalty.

The "Why" of A. P. I. Boiler Standardization

Paper read before Standardization Division, Eighth Annual Meeting of American Petroleum Institute at Chicago

By R. G. HAMAKER
Humble Oil & Refining Company

THE standardization work of the A. P. I. has been applied to oil field boilers with the result that many advantages and economies are definitely apparent for the boiler manufacturer and the production department of the Petroleum industry.

The A. P. I. Boiler Specifications have been developed by a committee composed of the best talent available among oil field operators and all oil-field-type-boiler manufacturers.

Construction Specifications

Construction details are based upon the A. S. M. E., Boiler Construction Code, long recognized as the best authority on boiler construction. The A. S. M. E. Boiler Code has, as a matter of fact, been made a part of these A. P. I. specifications and by its adoption the buyer is guaranteed protection. The code provides accurate and reliable material specifications for such as boiler plate, castings, rivets, stay bolts, etc. These specifications provide for inspections, rejections, ladle analyses and check analyses, and includes physical tests such as tension tests, bend tests, quench bend tests, gage variation, flattening tests, fracture tests, modification of elongation, etc., and chemical composition requirements. The user is assured safety, quality and proper steam capacity for the size of boiler specified.

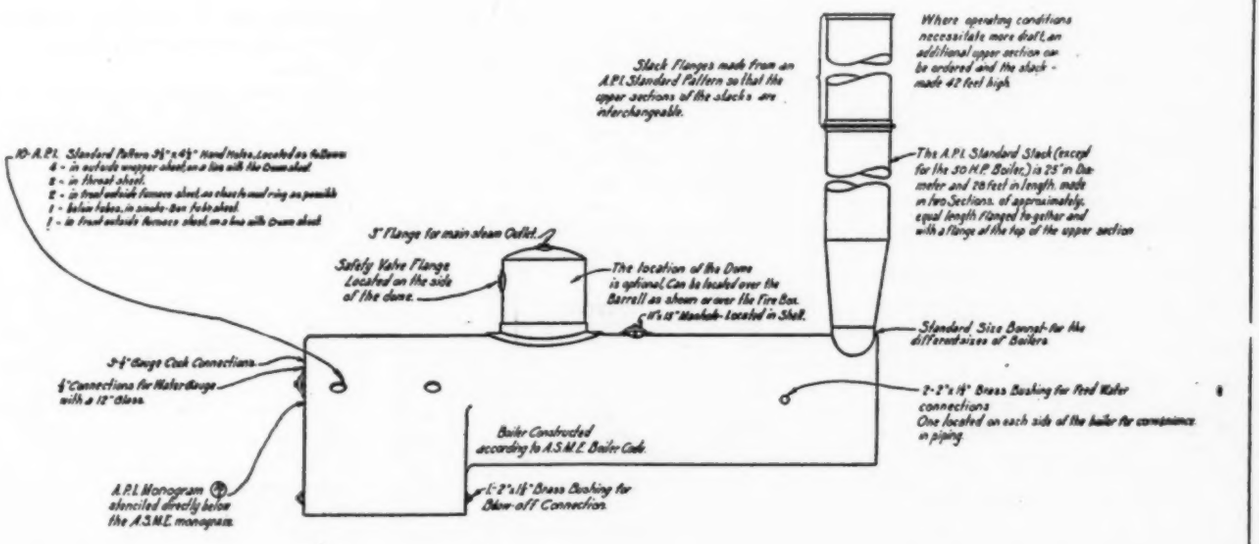
Boilers which have been built in accordance with the A. P. I. Specifications and bear the A. P. I. stamp can be operated in any part of the country without changes in the boiler to meet local requirements for obtaining permits for installation and operation.

One prominent boiler manufacturer is quoted as follows:

"Regarding the A. P. I. Specifications for oil field boilers there is only one argument, that is the purchaser knows just exactly what he is getting when he specifies A. P. I.. This assures the purchaser that he gets value received for every dollar he pays when purchasing an A. P. I. boiler."

Boiler Rating

Prior to the A. P. I. Specifications there was no standard or common method for computing boiler horse power. "In estimating the heating surface of a boiler it

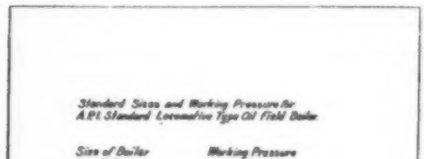

Where operating conditions necessitate more draft, an additional upper section can be ordered and the stack made 42 feet high.
Stack Flanges made from an A.P.I. Standard Pattern so that the upper sections of the stacks are interchangeable.
The A.P.I. Standard Stack (except for the 30 H.P. Boiler,) is 25' in Diameter and 28 feet in length, made in two Sections, of approximately equal length flanged together and with a flange at the top of the upper section
10- A.P.I. Standard Pattern 14" x 18" Hand Holes, Located as follows
4 - in outside wrapper sheet, on a line with the Dome sheet
2 - in throat sheet.
2 - in front outside furnace sheet, as close to mud ring as possible
1 - below tubes, in smoke-box tube sheet.
1 - in front outside furnace sheet, on a line with Dome sheet
3" Flange for main steam Outlet.
Safety Valve Flange Located on the side of the dome.
The location of the Dome is optional. Can be located over the Barrell as shown or over the Fire Box.
16"x 12" Manhole- Located in Shell.
Standard Size Bored for the different sizes of Boilers
3-4" Gauge Cock Connections
4" Connections for Water Gauge with a 12" Glass.
2-2"x 1 1/4" Brass Bushing for Feed Water connections One located on each side of the boiler for convenience in piping
Boiler Constructed according to A.S.M.E. Boiler Code
A.P.I. Monogram stenciled directly below the A.S.M.E. monogram.
1-2"x 1 1/4" Brass Bushing for Blow-off Connection.

A.P.I.—STANDARD LOCOMOTIVE TYPE OIL FIELD BOILERS

Fig. 1

is customary to take the area of the boiler in contact with the heat generated on one side and water on the other side. The evaporative quality of a boiler is assumed to be proportionate to the number of square feet of heating surface." This is an arbitrary way of rating a boiler which is to some extent misleading because it is possible to have two boilers with the same heating surface which do not have the same steam raising capacity. The reason for this is that all parts of the heating surface do not posses the same thermal efficiency. The flow of heat from one side of the heating surface to the other side depends upon the temperature difference between these two points and the rate of heat transmission increases much faster than the increase in temperature difference. However, this method does afford a satisfactory and practical means for rating oil field boilers.

A. P. I. boilers are rated upon 10 square feet of heating surface for a boiler horsepower. Before this standardized method of rating a boiler was established, two boilers of equal heating surface and possessing equal efficiency could vary in rating as much as 12 to 13 horse power. Naturally such variation in rating is misleading to purchasers as well as unfair to manufacturers.


Standard Sizes and Working Pressures for A.P.I. Standard Locomotive Type Oil Field Boiler

Size of Boiler H.P.	Working Pressure Lbs.
30	150
50	150
65	175
85	175

A.P.I. Boilers are rated upon 10 sq. Ft. of Heating Surface per Boiler Horse Power

Fig. 2

Boiler Sizes

The number of sizes of A. P. I. boilers has been reduced to four, thus eliminating for both the operator and manufacturer, excessive stocks of boilers of many sizes.

Working pressures have been specified for the four different sizes of boilers. They are as follows:

30 H. P. .....150 pounds
50 H. P. .....150 pounds
65 H. P. .....175 pounds
85 H. P. .....175 pounds

These pressures are pretty high for oil field type boilers and it must be remembered that a boiler of sufficient capacity with steam lines of ample capacity and portection provided are far more important to the delivery of horse power than the pressure carried at the boiler. Good boiler installation and operation will bear out this statement. Several worthwhile papers have been written on "How to get more steam out of oil field boilers" and few, if any of these, make reference to the requirements of high working pressures.

Standard Openings and Fittings

In the past, in furnishing fittings with boilers, each manufacturer and purchaser usually had varying ideas of the necessary size and kind of fittings. The committee, therefore, made a standard list of the number and sizes of fittings to be furnished when the purchaser desired fittings to be delivered with the boiler. In order to simplify this list of fittings, the standard sizes and numbers for all A. P. I. boilers were made the same with the exception that the 30 horse power boiler only requires one safety valve.

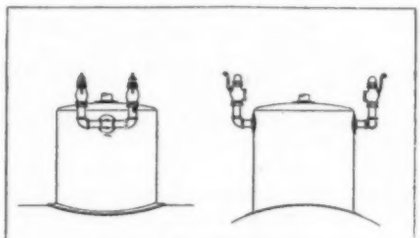

A.P.I. SAFETY VALVE INSTALLATION

Fig. 3

Safety valve flanges will be located on the sides of the dome and will, therefore, be in accord with the A. S. M. E. code, which requires that all safety valves shall be connected to the boiler independently of any other steam connection and attached as close as possible to the boiler without any unnecessary intervening pipe or fitting.

It will be noted that the pipe sizes are reduced to a minimum number which is a distinct advantage in the piping and in the carrying of stocks of pipe and fittings.

In Table II of the A. P. I. Boiler Specification is tabulated a list of standard openings and fittings which will be furnished by the manufacturer.

In Table III is provided a standard list of fittings to be furnished at the option of the purchaser.

As provided in Table II, steam connections for all sizes of boilers will be three inches, having threaded openings of standard thread. Likewise, the size and number of boiler feed connections, size and number of blow-off connections, size and number of gage cock connections and size of water gage opening have been made standard for all sizes of A. P. I. boilers.

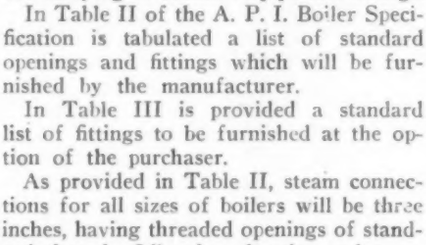

A.P.I. STANDARD STACK FLANGES FOR 25" DIA. STACK (INSIDE DIAM.)

Fig. 4.

Stacks for all A. P. I. boilers will be 28 feet long and carry standard flanges designed by the committee. This provides for efficient, well made stacks, easy to erect and with interchangeability.

Complete interchangeability of hand-hole plates, gaskets and crabs has been provided for with the adoption of a standard 3½ by 4½ hand-hole plate. The economy in such a standard will be materially reflected on the shelves of oil company warehouses. On a warehouse shelf recently examined by the writer four different sizes of hand-hole plates were found and upon inquiry from the warehouseman it was learned that it has heretofore been necessary to always carry all of these different sizes of hand-hole plates with gaskets in order to be prepared to supply emergency orders for boilers of any make or size that may, at any time, be moved into the district.

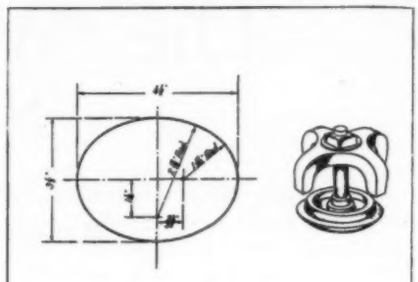

3½" x 4½" HAND HOLE COVER PLATE A.P.I. STANDARD

Fig. 5

A.P.I. PRESSURE GAUGE INSTALLATION

Fig. 6

In Table III standardized steam gages with syphon, cock and test gage are provided for.

Water gage connections and water gage

(Continued on page 42)

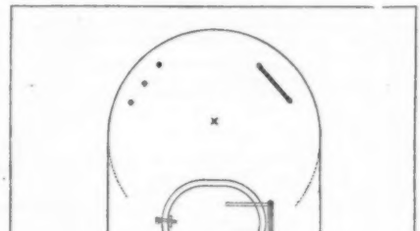

A.P.I. STANDARD GAUGE COCK AND WATER GLASS INSTALLATION

Fig. 7

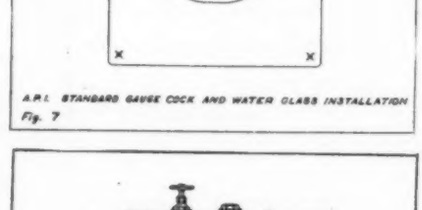

A.P.I. FEED WATER VALVE INSTALLATION

Fig. 8

West Texas Has Long, Steady Drilling Campaign Ahead

Many thousand acres have been proven for oil production and important indications revealed by wildcat producers

By H. H. KING
Staff Representative

FORT WORTH, Texas.—A steady drilling campaign is assured for the West Texas district over a long period by reason of many thousand acres having been proven for oil production in Pecos, Winkler, Crane, Upton, Howard and Reagan Counties, with possibilities of important production being obtained from tests now drilling in the vicinity of small wildcat oil producers in Ector, Loving, Glasscock, Crane and Winkler Counties.

The Yates shallow oil field, Pecos County, and the Hendricks field, Winkler County, are the most active drilling areas, with the Howard-Glasscock County field ranking third because of having an attractive shallow oil pay and a newly discovered lime pay at 2990 feet.

Big flush production is the incentive behind the development campaign being waged in the Yates and Hendricks fields, and latest field reports credit the former field with having 60 flowing wells with an estimated daily flow of more than 450,000 barrels of pipe line oil, with 40 additional drilling tests; 30 machines and derricks up; and 13 locations. The Hendricks field reports 23 completed oil wells, with a combined initial production of 70,260 barrels, with 61 additional drilling tests; 13 rigs and derricks up; and locations made for eight more tests.

The Yates field is proven for oil in flush quantities over an area of 12,000 acres, and is being restricted to a daily output of 42,000 barrels until new pipe lines can be built to the field. The oil averages 30 degrees gravity, and is produced from a soft lime formation at depths ranging from 560 to 1700 feet, with an average depth of 1000 feet. The greater part of the drilling done in this field has been with machines and spudders, with a few standard rigs in use.

Hendricks Unknown Quantity

The Hendricks field is an unknown quantity in producing area, and is the most active rotary field in Texas, due to the wells being drilled to about 200 feet of the oil and gas pay, then drilled in with standard tools. A rock pressure of about 1400 pounds must be dealt with in drilling in these wells, and first class casing and drilling equipment is used almost exclusively in order to lessen the hazard. The oil and gas producing horizon is from the lime formation, and varies in depth from 2500 to 3100 feet, according to the position of the wells on the structure, which has been proven for a distance of four miles north and south and nearly two miles east and west, with the limits remaining to be defined.

Unit Controlled Fields

Drilling in the Church & Fields and Gulf-McElroy areas, Crane County, has subsided lately by reason of production running in excess of pipe line outlet, and most of the offset locations having been drilled. The former field is averaging above 85,000 barrels daily, and the Gulf-McElroy field, which is entirely controlled by the Gulf Production Company with more than 1000 proven locations awaiting the drill, will not afford much new drilling until transportation facilities and crude prices improve, but each have a substantial reserve amount of acreage to be drilled up. This condition also applies to the Big Lake field, Reagan County, where the Big Lake Oil Company and the Texon Oil & Land Company are in complete control. The McCamey district, centering on the lower end of the Crane-Upton County line, likewise has acreage proven for oil production, but field work is somewhat curtailed because of transportation facilities.

The West Texas district is producing approximately 232,000 barrels of oil daily from 1122 flowing and pumping wells, with only three direct trunk line systems in operation from the district to distant marketing centers. Humble Pipe Line Company is the owner of one of these systems, with a daily capacity of 80,000 barrels, and is the only large purchaser of crude in the district. Gulf Pipe Line Company's trunk line, which is handling about 25,000 barrels daily, is loaded with oil produced by Gulf Production Company. Magnolia Pipe Line Company's recently completed eight-inch trunk line is rated at a maximum of 17,500 barrels daily capacity, and is to handle oil produced by Magnolia Petroleum Company and 10,000 barrels additional daily for Atlantic Oil Producing Company on a common carrier basis to the Gulf Coast. The Illinois Pipe Line Company, transportation subsidiary of the Ohio Oil Company, is building a trunk line to the Gulf Coast, but this system will only serve Yates field. Shell Pipe Line Company, transportation subsidiary of Roxana Petroleum Corporation, is building a 10-inch line from South Oklahoma to the heart of West Texas flush area, but this line offers little benefit to the small operators, since Roxana's West Texas production has been proven in sufficient quantities to load this line to capacity for many months after it is put in operation next summer.

The above pipe line systems completed and building will afford a combined outlet of about 185,000 barrels daily by next summer for the West Texas district, and "local" refinery consumption will not exceed 25,000 barrels daily, thus it can be assumed that field storage and tank car shipments must be drafted into service on a much larger scale to keep pace with the production now coming from completed wells, and those certain to follow by the development of the Yates and Hendricks fields, and less important areas. Some of the trunk line systems mentioned above are scheduled to be looped, or doubled the full length, while new lines are expected to be built into the district by other Mid-Continent pipe line companies. Stub lines from fields to tank car rack sites on the Orient and T. & P. Railroad have been completed, or started construction work on lately by Humble, Gulf, Atlantic, Independent Oil & Gas Company, Ocean Oil & Pipe Line Company, Southern Pipe Line Company, ranging in size from four to ten-inch and involving from 18 to 71 miles of pipe.

The Church & Fields area and the Hendricks field operators and crude buyers serving same are erecting approximately 6,000,000 barrels of large steel storage tanks, and total steel storage facilities in the West Texas district will reach the 30,000,000 barrel mark within the next six months, with producers and crude purchasing agencies contributing to same.

Simms Building More Tanks in Yates Field

San Angelo, Texas. — Two more 55,000 barrel steel tanks have been purchased by the Simms Oil Company for immediate erection on its prolific lease in the Yates field for protection should its big wells get beyond control. Simms built one large tank at the start of lease development to use in taking monthly production gauges in accordance with the proration plan used in the field. Having this tank available prevented a great waste of oil and a dangerous fire hazard in November when Simms' Yates 3 blew in flowing at rate of 36,000 barrels of pipe line oil daily at 1197 feet and the oil broke through behind the casing. It was necessary to flow the well practically open into the tank until the oil escaping outside the casing could be sealed off.

Yates Field Gauge Shows 25,207 Barrels an Hour

Wells not appreciably hurt by being shut-in; owners of small acreage protest proposed change in plan for prorating outlet

By H. H. KING
Staff Representative

SAN ANGELO, Texas—Official one-hour open flow gauges taken at the close of November on producing oil well in the Yates shallow field revealed that the present rate of oil drainage from the field has failed to cause a noticeable drop in production of individual wells. The gauging of 70 wells showed a combined hourly flow of 25,207.38 barrels, or at the rate of 604,977.12 barrels daily, while two big wells on the north end of the field are not included in these figures because of the owner not participating in the field proration plan. The available pipe line outlet for these wells flowed in accordance with the proration plan for the next period ending December 16, will remain at 42,000 barrels daily, or 6.94 per cent of the estimated potential daily output of the field.

Mid-Kansas Oil & Gas Company and Transcontinental Oil Company, joint discoverers of the Yates field and largest lease owners, commanded the major portion of the allotted pipe line runs for the next period by registering a potential daily output of 269,203 barrels from 26 flowing wells. This property will receive 18,689 barrels of the pipe line outlet, and the California Company, subsidiary of Standard Oil Company of California, takes second rank with 8591 barrels daily pipe line outlet from nine flowing wells. The McMan Oil & Gas Company and Marland Oil Company, operating as partners, were credited with having a potential daily output of 75,813 barrels daily, based on the single hour open flow gauge, from 10 wells, and will receive a market outlet for 5263 barrels daily. Simms Oil Company's trio of wells on a 407-acre lease at the high point of the field were rated at 58,677 barrels daily, and will receive 5263 barrels daily output.

The Mid-Kansas-Transcontinental's Yates 2-C, which is the largest producer in the field, gauged 2388.58 barrels of pipe line oil in one hour, as compared to 2725.12 barrels in one hour on the previous gauge. The same interests' Yates 7-A jumped to 1513.86 barrels of oil in one hour on the last gauge, as compared to 1167.3 barrels per hour previously. The California Company's Yates 7 is rated as the second largest producer in the field, having flowed 1804.21 barrels of pipe line oil during one hour, or at the rate of 43,301 barrels daily. Simms Oil Company's Smith 3, an inside location, gauged 1481.09 barrels on a single hour test. This well only drilled 10 feet of pay to a total depth of 1197 feet, and the oil broke through the casing seat and came to the surface outside the casing shortly after it was drilled in. The flow of oil had to be diverted to a nearby 55,000-barrel tank without back pressure, until the craters could be sealed off.

Gulf Production Company is not participating in the Yates field proration plan, and is operating an eight-inch line from its Yates lease to a 50-car capacity rack on the Orient Railroad near Hurdle, having contracted to sell 5000 barrels daily to Sinclair Refining Company of Louisiana. Gulf is operating this line, but will not exceed 10,000 barrels daily with the present equipment. Gulf drilled in its Yates 2, located on the south line of the Runnels County school land survey and on the north edge of the field, during the 24-hour period ending 7 a.m., December 4, this well flowed 10,265 barrels of 29.5 gravity oil after drilling pay at 1258-1349 feet, thus proving that big wells in the field will maintain their high rate of production, if not located on the lower edges of the structure. This is one of the few wells in the field that had been opened up for a period of 24 hours, or more. However, it is of interest to note that the production of the Yates field for any single day has probably never crossed the 60,000-barrel mark, even though it is regarded as being the greatest potential area in the country at present.

W. A. MONCRIEF
Vice president Marland Oil Company of Texas, Fort Worth, and chairman of executive committee in charge of Yates field proration

Announcement made November 25, regarding the proposal of a new proration plan to be applied to the Yates field beginning with the first of next month, using proven acreage as a basis for making a division of pipe line runs, is being protested by the small lease owners. A meeting of the proration committee was held in Fort Worth December 2, and another meeting is scheduled for December 12 to try and work out an equitable plan for allotting the pipe line facilities offered by Humble and Illinois Pipe Line Company. Should dissension arise among the Yates field operators over these proration plans, and a wide open policy be adopted in producing the oil, the entire crude market structure would suffer from the flood of oil that would be thrown upon the market at buyers' prices.

New developments under way in the Yates field will place the field in the million barrel daily potential class within six weeks, if the hourly gauge of each well is used in arriving at the daily production figures. The field has 72 completed

wells, and 40 drilling; 32 machines and rigs under way; and locations made for 10 more tests. This new work offers a total of 82 operations, and virtually all are located in the proven flush area, thus making it a simple task to boost the daily potential to a million barrels, especially since the older wells are not registering any appreciable slump in output.

Big Wells in South End of Pampa District Materially Increase Panhandle Output

Amarillo, Texas—Crude production in the Texas Panhandle district is following an upward trend as result of the completion of a number of big wells from the granite-wash pay horizon on the Bowers and Jackson leases in the south end of the Pampa district, Gray County. This increased output is being readily absorbed by the pipe line companies, as the oil averages about 44 degrees gravity, and is practically free from sulphur, thus putting it on a par with best grades of Mid-Continent crudes. However, the posted price for this particular grade of oil in the Panhandle is $1.12 per barrel, or 32 cents below the posted price in the Mid-Continent district.

The Bowers-Jackson area averaged 10,400 barrels daily from eight wells during the past week, with Humble Pipe Line Company and the Sinclair Crude Oil Purchasing Company running the oil. Other small lines are building from tank car racks at Pampa to solicit daily runs at a premium above the price offered by the two major purchasers, and this competition may result in an upward revision of posted prices for this particular grade of oil.

Danciger Oil & Refining Company et al completed their third flowing well in the field November 30 with an initial flow of 2500 barrels daily from regular pay at 2960-85 feet, and have announced three new locations to be drilled on the Jackson 160-acre lease. The production of this well is not included in the accompanying table. This new completion is located on the south line of the northwest quarter of section 88, block B-2, and a north offset to M. J. Delaney-Eslick et al's Jackson 1, which blew in October 30 making 5500 barrels 44 degree gravity oil daily at 2980-84 feet. This latter well is holding at 4935 barrels daily with the aid of agitation, but is showing some water.

The Texas Company's A. Chapman 1, located in the northwest quarter of section 51, block 25, H. & G. N. survey, and in east central part of Gray County, has stimulated interest in this semi-wildcat area after being completed last week with a natural flow of 590 barrels of 42.5 gravity oil from granite-wash pay at 2818-23 feet, with a surface elevation of 2822 feet.

The Cockrell ranch pool in lower Hutchinson County contributed an extra large producer last week when the R-J-W Oil Company's Cockrell 1 gauged 2000 barrels natural after drilling lime pay at 2980-81 feet. This well is located in the south half of the southeast quarter of section 3, block 3, D. & S. E. survey, and is to be deepened.

Daily average production during the past week on the Bowers and Jackson leases in Gray County, where the best grade of oil in the Texas Panhandle is found, is shown below by companies, with the number of wells included:

Company—	Wells	Prod.
Danciger O. & R. Co. et al	2	3,140
M. J. Delaney-Eslick et al	1	4,935
Gibson Oil Corporation	1	285
Gulf Production Company	1	1,720
Majestic Oil Company	2	200
C. E. Pollard et al	1	120
Total	8	10,400

Yates Production Gauge

The pipe line proration schedule for the Yates field effective 7 a.m. December 2nd to December 16, 1927 is shown below by wells, with an estimated potential daily output of 604,974 barrels from 72 flowing wells:

Company and lease—	Producing Horizon	Date Completed	Estimated Initial Prod.	Official 1 Hour Gauge in bbls.	Allotted Daily Prod. in bbls.
The California Co.'s					
M. A. Smith 1	1296-1331	10- 6-27	12,000	426.26	
M. A. Smith 2	1570-1700	10-24-27	2,500	100.44	
M. A. Smith 3	1425-1535	11-10-27	2,640	148.10	1,124
I. G. Yates 1	1022-1027	7-29-27	10,000	625.94	
I. G. Yates 3	1060-1206	10-18-27	14,000	973.27	
I. G. Yates 4	1023-1072	10-14-27	2,000	131.35	
I. G. Yates 5	1060-1065	10-23-27	18,000	831.12	
I. G. Yates 6	1094-1111	11-30-27	415	115.90	
I. G. Yates 7	1182-1202	11-28-27	15,000	1,804.21	7,467
Crude Oil Co.'s (was Allsman--Bell)					
Pecos River Bed 1	970-1070	6-21-27	165*		
Pecos River Bed 3	886- 936	10-31-27	5,500*	118.98†	
Pecos River Bed 4	840-1040	11-21-27	425*	30.52	249
Gulf Production Co.'s					
M. A. Smith 1	1304-1360	9-24-27	1,680	95.07	159
G. L. Thompson 1	935- 988	9-13-27	13,500*	264.77	
G. L. Thompson 2	939- 940	10-28-27	1,500*	16.77	459
I. G. Yates 2	1258-1349	12- 3-27	10,262‡		
I. G. Yates 3	1267-1425	11-17-27	1,680‡		
Humble Oil & Refining Co.'s					
M. A. Smith 1	1425-1600	9-30-27	1,585	127.57	
M. A. Smith 2	1425-1510	11- 8-27	2,640	132.92	
M. A. Smith 3	1365-1480	11-21-27	8,000	423.80	1,140
M. A. Smith 2-B	1313-1451	11-28-27	3,200	219.38	366
Kirby Pet. Co. and Edson Pet. Co.'s					
J. H. Tippett 1	1293-1465	11-26-27	800	78.72	131
Marland Oil Co.'s					
I. G. Yates 1-A	936-1027	8-18-27	12,000*	200.09	
I. G. Yates 2-A	1045-1046	11- 1-27	8,000*	433.87	
I. G. Yates 3-A	1135-1148	11- 1-27	600*	41.10	
I. G. Yates 4-A	971-1055	11- 7-27	3,700	185.27	1,433
Mazda Oil Corp. and Savoy Oil Co.'s					
M. A. Smith 1	1455-1600	10-19-27	600	73.56	123
McMan Oil & Gas Co. and Marland Oil Co.'s					
I. G. Yates 1	1237-1327	8- 9-27	7,500	1,008.18	
I. G. Yates 2	1112-1291	10- 7-27	13,000	518.19	
I. G. Yates 3	1204-1358	9-30-27	1,500	91.68	
I. G. Yates 4	1290-1420½	9-30-27	2,600	107.62	
I. G. Yates 5	1539-1695	10-12-27	3,900	174.06	
I. G. Yates 6	1495-1632	10-12-27	5,100	153.50	
I. G. Yates 7	1193-1310	11-15-27	15,000	561.64	
I. G. Yates 8	1340-1504	11-20-27	2,880	164.76	
I. G. Yates 9	1302-1500	11-20-27	2,500	164.76	
I. G. Yates 10	1360-1510	11-23-27	3,400	224.55	5,263
Mid-Kansas Oil & Gas Co. and Transcontinental Oil Co.'s					
Smith-Taylor 1	1185-1272	6- 4-27	3,575	113.08	
Smith-Taylor 2	1255-1374	10- 8-27	2,640	120.40	
Smith-Taylor 3	1305-1423	11-15-27	7,680	227.36	768
I. G. Yates 1-A	990-1005	12-10-26	500	135.40	
I. G. Yates 2-A	999-1035	2-11-27	6,600	832.50	
I. G. Yates 3-A	1005-1082	3-22-27	1,090	50.84	
I. G. Yates 4-A	1135-1249	5-13-27	12,000	196.28	
I. G. Yates 5-A	1155-1315	8- 7-27	2,880	148.42	
I. G. Yates 6-A	935-1045	6-23-27	15,000	1,023.70	
I. G. Yates 7-A	1227-1277	8-18-27	11,000	1,513.86	
I. G. Yates 9-A	970-1009	11-24-27	3,600	152.84	6,754
I. G. Yates 1-B	1206-1285	2-24-27	12,000	815.30	
I. G. Yates 2-B	1207-1348	7- 2-27	5,000	145.44	
I. G. Yates 3-B	888- 913	8-16-27	12,000	614.52	
I. G. Yates 4-B	895- 917	10-29-27	3,500	116.06	
I. G. Yates 5-B	940-1092	11- 8-27	1,035	164.04	
I. G. Yates 6-B	985-1072	11- 6-27	2,585	223.56	
I. G. Yates 8-B	998-1065	11-27-27	3,500	363.20	
I. G. Yates 9-B	974-1080	11-15-27	5,500	731.70	
I. G. Yates 15-B	965- 995	11-30-27	500	37.32	5,350
I. G. Yates 1-C	1014-1115	5-17-27	4,500	198.76	
I. G. Yates 2-C	955- 993	11-10-27	25,000	2,388.58	
I. G. Yates 3-C	1030-1150	11-15-27	2,975*	76.28	
I. G. Yates 5-C	1032-1130	11-27-27	7,500*	228.66	4,819
I. G. Yates 1-D	1063-1330	10-30-27	5,000	524.00	873
I. G. Yates 1-E	1055-1066	11-30-27	500*	74.64	125
Red Bank Oil Co.'s					
M. A. Smith 1	1581-1624	8-25-27	360	55.56	
M. A. Smith 2	1515-1667	11-22-27	800	75.40	218
Roxana Petroleum Corp.'s					
M. A. Smith 1	1537-1564	10- 9-27	500	74.34	124
J. H. Tippett 1	1332-1400	9-30-27	4,800	177.93	
J. H. Tippett 2	1350-1517	11,15-27	4,000	225.57	
J. H. Tippett 3	1525-1680	11-28-27	5,600	179.26	971
Simms Oil Co.'s					
M. A. Smith 1	1305-1385	9-27-27	3,600	144.99	
M. A. Smith 2	1146-1246	10-31-27	25,000	818.78	
M. A. Smith 3	1187-1197	11-28-27	36,000	1,481.09	4,074
Totals for 72 wells			448,092	25,207.38	42,000

*Indicates wells making water. †Includes No. 1 hourly flow. ‡Production handled by private line.

Hendricks Field Output Limited to Handling Facilities

Production reached 38,870 barrels daily during last week and tankage and pipe lines are being rushed to care for more oil

SAN ANGELO, Texas—New completions in the Hendricks field, which now ranks second to the Yates field in potential production, are being brought in as rapidly as steel storage can be provided, and operators have about given up hopes of this flush area being placed on a restricted drilling and production basis. Actual production in this field during the past week amounted to 38,870 barrels of oil daily, or about 5000 barrels below the average for the Yates field during the same period. Production in the Yates field is being limited to available pipe line outlets, while that of the Hendricks field will be allowed to go the limit, if steel tankage, tank car shipments and several direct pipe line outlets now building can accommodate same.

One-half of the current production in the Hendricks field is going into field storage, while the remainder is being moved to distant tank car racks operated by the Southern Pipe Line Company and American Petroleum Company. The former concern is building an eight-inch line parallel with its old six-inch carrier to the car rack at Wickett after postponing same for three months, and new lines are being headed to the field by Humble, Atlantic, Ocean, Independent and the Shell Pipe Line Company. The latter has finished about 18 miles in building a six-inch line from McCamey district to the Hendricks field, and is also unloading pipe at McCamey to build to the Yates field.

Fire Shuts Wells Down

Operations in the heart of the Hendricks field were halted early this week when Pure Oil Company's Grisham-Hunter 2 caught fire from the engine while making about 15,000,000 feet of gas and a spray of oil from top of pay at 2657 feet. Gulf's Hendricks 6, a south offset to the burning well, was flowing 50 barrels hourly at 2885 feet and drilling in, but ceased operations. Texon Oil & Land Company's Grisham-Hunter 1-"A," an east offset to the blazing well, also ceased operations while drilling deeper at 2867 feet and flowing 1600 barrels daily. This latter well was originally completed as a gasser, and blew itself in as a small oil producer at 2814 feet.

Magnolia Petroleum Company scored its first production on the Hendricks 80-acre lease, which was purchased from Church-Fields and Weekly for $2250 per acre and a one-fourth overriding royalty, with an initial flow of 145 barrels per hour. This well is an east offset to Roxana's recently completed gusher, and is to be carried deeper, as Magnolia has four large tanks completed and ready to receive oil. Magnolia plans to flow its well wide open, as is the case with some of the wells on nearby leases, and will drill up its lease while the flush is available.

A gas pocket at 2405 feet in the Amerada Petroleum Corporation's semi-wildcat test, located three miles east of production in the Hendricks field, caused a fishing job early this week.

Production Jumps

Daily production in the Hendricks field jumped to 38,870 barrels during the past week from 24 completed wells, with most of the big wells greatly restricted in output pending the erection of tankage, or completion of pipe lines. Field work is registering a steady gain, as indicated by the accompanying table, which shows 49 tests drilling in the big lime horizon or shut in at this point until facilities can be had to handle the oil as produced. Fifteen tests are drilling above the lime, and rigs, derricks and locations number 28, making a total of 92 operations to be reckoned with in estimating future production in the field proper.

Independent Oil & Gas Company, which has contracted to build an eight-inch line from its properties to a tank car rack site on the Texas & Pacific Railroad and sell oil to the New Orleans Refining Company's Norco, Louisiana, plant, made four new locations on its 80-acre lease in the west half of the southwest quarter of section 34, block B-5, during the past week. These locations require offsets from Southern Crude, Atlantic and Roxana.

The big lime horizon in the Hendricks field is proving very irregular on the lower end of the field, and during the past week Humble Oil & Refining Company's Hendricks 3-B, located in the northeast corner of the north half of southeast quarter, section 29, block B-5, did not encounter the lime until 2844 feet. This test has a surface elevation of 2806 feet, and is about 350 feet lower than producing wells within a half mile radius. Roxana's test in the adjoining 80-acre tract to the south logged the top of the lime at 2657 feet, with a surface elevation of 2796 feet, and failed to make a producer at 3002 feet, but is now cleaning out to go deeper.

Crude stocks in the Hendricks field and in storage at the car racks amounted to 493,000 barrels on November 24. Steel storage facilities for 1,543,000 barrels of oil have been completed, and new tanks under construction will add 1,670,000 barrels, making a total of 3,213,000 barrels for this field.

HENDRICKS FIELD OPERATIONS

The status of field operations in the Hendricks field, Winkler County, Texas, at the close of last week is shown below by companies:

Companies—	Locations & Rigs	Drilling Tests	Tests in Big Lime	Comp. Wells	Initial Prod.	Present Prod.
Amerada Petroleum Corporation	..	..	1	..	....	....
Arizona Mining & Engineering Co.	1	..	..	..	....	....
Atlantic Oil Prod. Co.	1	2	4	1	1,680	*935
Atlantic & J. D. Collett	1	..	..	..	....	....
V. T. Bolin & Co.	1	..	..	..	....	....
Cranfill-Reynolds, et al	1	..	1	2	11,500	6,320
Eastland Oil Company	..	..	1	..	....	....
Gulf Production Co.	1	..	3	2	11,210	*3,870
Humble O. & R. Co.	1	..	3	2	5,900	*5,350
Independent Oil & Gas Co.	6	1	2	2	7,550	*3,070
Landreth Prod. & Roxana	2	..	2	2	3,000	*2,100
Magnolia Petroleum Co.	2	2	2	..	....	*720
Murchison & Cranfill	3	..	3	3	5,600	665
Joe Maxwell & Turman	1	..	3	..	....	*70
Pure Oil Company	1	..	5	1	5,000	*510
Republic Production Company	..	1	2	..	....	....
Roxana Petroleum Corporation	2	1	2	1	10,000	*3,500
Sheldon & Burden	..	..	1	..	....	....
Southern & Westbrook	4	6	5	2	6,585	6,300
Southern & Dixie Oil Co.	..	..	7	5	6,460	*4,800
Texon Oil & Land Co.	..	2	2	1	675	660
Totals	28	15	49	24	75,160	38,870

*Production partially pinched.

Texas Starts Caldwell County Test

Houston—The Texas Company has a rig up for a new wildcat test in Caldwell County, the Roebuck 1, located about eight miles south of Dale, near the town of McMahan in the southeastern section of the county. Several tests have been drilled in this vicinity and have encountered indications of oil. The wildcat is located on the 112-acre E. A. Roebuck tract in the B. McCulloch survey, being 1200 feet from the southwest and 600 feet from the southeast lines.

The Texas Company's operations in Caldwell County also include three tests drilling in the serpentine field at Dale. In that field the Lackey 5 was drilling early this week at 325 feet; the Osteen 1 at 736 feet in shale, and the Osteen 2 was drilling at 1300 feet in shale and lime.

Seminole District Production Tumbling Again

Indicated that rapid decline will go unchecked as most of wells have been shot; wildcat producers may mark new pools

By WALLACE DAVIS
Staff Representative

TULSA—Seminole's last major threat, so far as the five producing pools are concerned, is gone if indications offered over the past week end in a sharp production decline can be taken as a criterion. From past experience this temporary decline would have little weight but for the fact that the bulk of the well shooting program is finished.

The next move to arouse fear in this great Wilcox area is the group of probable producing areas found around Little River and Bowlegs, namely: Gypsy's wildcat producer to the northwest of Bowlegs, Gypsy's well to the west of Little River, Mid-Continent's well to the east of Little River, and Independent's wildcat discovery to the south and slightly west of Little River. Development around these potential pools is expected to start with the coming of better crude prices, it not being a wise move to begin drilling offsets and thus endanger the crude market with another possible flood of oil, but on the other hand these various spots have yet to prove their value as producing areas.

Seminole's five major pools are at last showing real signs of taking a sharp downward trend in production, the most noticeable decline coming over the past week end. The area's total yield at Monday morning's gauge was 406,279 barrels against 411,532 for Sunday morning and 416,623 for Saturday. And even with this sharp decline the figures fails to show the actual natural decrease, for Monday's gauge showed its respective loss in the face of an increase of 3360 barrels in a single well after being shot. This was Barnsdall's Davis 3, located in the southwest of the northeast of the southwest of section 11-9-5, Earlsboro, which was producing 130 barrels daily from Wilcox at 4266-71 feet, and which increased to 3540 barrels Monday morning following a 15-quart shot.

Well Average Below 400

The big drop in Seminole production brings the well average in the five pools to below 400 barrels for the first time in the fields' history, 1035 wells having made the 406,279 barrels at Monday's gauge, or a well average of 392 barrels.

While there is a long list of wells yet scheduled to be shot, the long end of the shooting is past, and this having been the only source lending much stimulus to the huge production for the past month, every factor is pointing to a rapid decline. At the close of the past week there were only 166 wells drilling in the area and 16 rigs up for future wells, and 17 locations staked. The average initial per well drilled in the area, including failures, is running less than 400 barrels, and not so much higher than this figure when only the successful completions are considered.

Seminole production by fields for December 4 and 5 is as follows, with the number of producing wells by fields for the latter day:

	Wells	Dec. 4	Dec. 5
Little River	77	39,275	38,754
Bowlegs	286	120,906	120,978
Earlsboro	285	170,093	165,856
Seminole City	319	56,629	56,852
Searight	68	24,629	23,839
Totals	1,035	411,532	406,279

Considering the present activity under way in the proven fields, the shutdown agreement on the part of owners of the outside discovery wells, the fact the greatest production benefit has already been reaped from shooting and the continued decrease in the average initial yields of new producers, the area apparently is destined to show a great drop from now on into the coming year. Within the coming six weeks the total yield from the area will no doubt fall on an average of around 2000 barrels daily, this in the face of the possibility that on some days during this time there will be a slight gain, not to speak of days when the production will hold stable.

In the active sections of the Seminole district early this week there were two operations outstanding in interest.

Tulsa—Seminole increased 623 barrels over Monday during the period ending at 7 a.m., Tuesday.

Barnsdall's Fife 1, northeast of the northeast of the northwest of section 14-8-5, five miles west of Bowlegs, topped the Simpson at 4251 feet and Tuesday noon was drilling eight feet in with 2000 feet of oil in the hole and new pool practically assured. Viola lime was topped at 4173 feet.

Snowden & McSweeney extended Little River a mile and a quarter south, heading 37 barrels hourly Wednesday morning. The Wilcox was topped at 4315 feet. The Texas Pipe Line Company is connected, but operators are shutting in the well in observing the proration agreement.

Barnsdall Oil Company's wildcat in the northeast corner of the northwest quarter of section 14-8-5, which early last week showed signs of opening a new area, was drilling Monday at 4248 feet in the Viola lime, after running pipe at 4189 feet. A show of oil was encountered Monday night of last week in the top of the Viola, which was topped unusually high. Snowden & McSweeney's Tiger 1, a wildcat south of Little River in the northeast corner of section 13-7-6, was preparing to swab after getting 400 feet of oil in the hole bottomed at 4311 feet. The Viola lime was topped in this well at 4213 feet. It has the ear marks of a producer, and if completed a producer will be shut in to comply with the present shutdown agreement, according to the operators.

Magnolia's Cruse 1, in the northwest of the southeast of the southeast of section 2-7-6, Little River field, topped the Viola at 4201 feet and Monday had 200 feet of oil in the hole. Magnolia's Edmondson 4, in the northeast of the southwest of the southwest of section 3-9-5, Earlsboro, topped the Viola at 4336 feet, and swabbed 15 barrels Monday morning. After drilling to 4375 feet it swabbed 226 barrels, half water. In section 12-9-5 Magnolia's Seay 9 swabbed 157 barrels in 12 hours after finding the Wilcox at 4280-94 feet, and Seay 7, in the same section, swabbed 100 barrels from the Wilcox at 4336-43 feet. Gypsy's Bud Carter 11, in section 11-9-5, made 2595 barrels from the Wilcox at 4467-89 feet Monday.

Bowlegs

Bowlegs field had four wells showing up for production Monday. Gypsy's Harjoche 1, in section 10-8-6, swabbed 350 barrels in 12 hours after getting the Wilcox at 4195-4210 feet, Prairie's Harbor 8, in section 10-8-6, was showing oil in the upper Simpson at 4310 feet, Pure Oil Company's Strothers 7, in section 11-8-6, had 500 feet of oil in the hole after swabbing 15 barrels, and was drilling in the Viola lime at 4466 feet Monday morning, and Magnolia's Rhodes 1, in section 12-8-6, swabbed 300 barrels from pay in the Wilcox at 4158-77 feet.

T. B. Slick's No. 1 wildcat in the northeast of the northwest of the southeast of section 12-6-6, was a location at the close of the week, and his No. 1 in the northeast of the southwest of section 13-5-6 was building rig. His No. 1 in section 1-6-6 was running

six-inch casing at 2445 feet, Mid-Continent's Manuel 1, in the northeast of the southeast of the northwest of section 27-7-6, topped the Viola lime at 4182 feet Saturday, set six-inch casing at 4193 feet, and on Monday was drilling at 4200 feet. Boyles et al's Lewis 1, in the southeast of the southeast of the southwest of section 29-5-5, swabbed 90 barrels after a shot of 100 quarts from 2297-2303. This Pottowatomie County test topped the Hunton lime at 2160 feet and found the first oil at 2297 feet. Jarvis & Holm's No. 1 wildcat, in the northwest of the southeast of the northwest of section 21-7-8, was cleaning out Monday, after setting six-inch casing at 3413 feet. Westheimer & Darby's No. 1, in the northeast of the southwest of the northeast of section 19-5-8, had cemented eight-inch casing at 2403 feet.

Field activity continued during the past week to show a marked decline over Oklahoma. There were 979 operations at the close of the week in comparison with 1010 for the preceding week. Of this number there were 326 in the Shawnee-Seminole area. Out of the 979 operations there were 133 wells shut down; 29 of these in the Shawnee-Seminole area. Kansas, for the first week in some time, showed a falling off in activity. There were a total of 268 operations in all Kansas fields, against 294 of the preceding week.

Houston.—The Texas Company was rigging up this week on its location for the Wheat 3 at Big Creek, Fort Bend County. This test is 250 feet southeast of the Wheat 2, which was completed about two months ago, and which extended the productive area of the field about 2000 feet to the southeast. The Wheat lease of The Texas Company comprises about 1340 acres, and is in the M. Young survey of Fort Bend County.

Erastus T. Patterson Passes at Independence

WITH the passing of Erastus T. Patterson the oil industry lost one of its ablest leaders, the nation lost one of its most worthy citizens and hundreds of big company executives lost one of their staunchest friends.

Mr. Patterson's death at his home in Independence, Kansas, Sunday night, November 27, closed his remarkable career of 43 years in the oil business, the entire period of which he was connected with the allied companies of a single concern—the Standard Oil interests. As treasurer and a director of the Prairie Oil & Gas Company at the time of his death at the age of 62, he held the record of having the longest service of any man with that organization and its sister subsidiaries. His death climaxed a period of several years of ill health, which, incidentally failed to keep him out of the service of the company. He was on the job the day preceding his demise.

The Prairie's venerable "Pat" was probably one of the best known men identified with the oil industry. From his start in the business in October, 1884, as a gas fitter with the Oil City Fuel Supply Company at Titusville, Pennsylvania through his climb to his position with the Prairie, he became thoroughly acquainted with every branch of the industry. His early connections back in the East established him as a member of the old school. He was a personal friend and coworker of Joseph Seep, C. N. Payne, Carl Archbold and Robert S. Hampton, and many of the other well known men famous for building the industry's foundation, and was a personal friend of practically all of the officials of the original Standard Oil Company.

His position of treasurer of the Prairie Oil & Gas Company dates back 17 years, and prior to that time he was cashier for several years. In these positions he has been able to establish an outstanding record. He is reputed to have handled more money than any other single individual in the oil business. For approximately 27 years he has been signing checks for all of the money passing through every department of his company—for leases and rentals, for crude purchases, royalty, equipment and labor. Of recent months this has meant the personal signing of roughly 30,000 checks monthly, the total disbursement of which has been running in the neighborhood of $15,000,000 monthly, or approximately $170,000,000 annually. In order to sign this number of checks he resorted to the use of the signograph, signing 10 checks at one time.

E. T. PATTERSON

Mr. Patterson was born at Kenosha, Wisconsin, September 30, 1865. He was 19 years of age when he joined the Oil City Fuel Supply Company at the bottom of the ladder. From this company he took a promotion with the Mahoning Gas Fuel Company at Youngstown, Ohio, and later went with the Forest Oil Company, where he rose to cashier and assistant secretary. When the Prairie Oil & Gas Company succeeded to the Forest Oil Company's business in Kansas he became cashier for the Prairie. His marked business ability and excellent judgment resulted in his rapid rise to his position of treasurer.

He is survived by his wife, two daughters, Mrs. E. G. Schreck of Eldorado, Kansas, and Mrs. Gerald Todd, of Independence, and four sisters, Mrs. Charles Church of Titusville, Pennsylvania; Mrs. John Fertig and Mrs. S. C. Fertig, both of Pasadena ,California, and Mrs. Gilbert Bloss of London, England.

The esteem in which Mr. Patterson was held in the eyes of his fellow workers was well displayed at his funeral Friday, December 2, when all Prairie Oil & Gas Company and Prairie Pipe Line offices were closed, and more than 500 employes marched in a body to pay their last respects at his bier.

Mechanics of the Air Lift

Disclosing a means of efficiently using low pressure air for pumping deep oil wells

By BENJAMIN ANDREWS

THE accepted theory of the mechanics of the air lift is that the column of liquid in the eduction pipe is inter-mixed with air, thereby displacing some of the liquid which is forced from the discharge of the eduction pipe, thus reducing the weight of the resulting column of liquid and air and causing a diminution in back pressure exerted at the intake of the eduction pipe against the entering liquid to be pumped, and thus permitting the liquid to flow into the eduction pipe and finally to be discharged with the air from its upper end.

It stands to reason that if there were not slippage of air through the water or liquid being pumped, the efficiency of the apparatus, disregarding friction, would be perfect, or 100 per cent; but due to adiabatic expansion of the air, heat is absorbed from the water and a real mechanical efficiency of over 100 per cent would be secured. In the early air lift installations the mechanical efficiency seldom exceeded 30 per cent, but the efficiency now on water well appliances may be as high as 60 per cent. However, this latter figure is seldom approximated in practice.

It was natural for engineers and technologists to investigate the enormous losses of power in the air lift and it was natural to attribute the loss of efficiency to the slippage of the bubbles of air up through the liquid. Working along this theory, numerous investigators in different parts of the world almost contemporaneously elaborated a highly technical formula for the velocity which bubbles of dilating diameters ascend through zones of decreasing liquid pressure, and this ascending velocity, equivalent to the slippage in the air lift, was supposed to account for lack of mechanical efficiency and it was universally understood that the efficiency loss increased with the size of the bubble. Dr. Pohle, one of the early experimenters, discovered that the conditions in the air lift were not in accordance with this theory and he discovered that in practice the air and water tended to assume plug-like positions in the pipe, a cylinder of water and a cylinder of air one above the other, and on this hypothesis he applied for and was allowed the well known Pohle Air Lift Patents.

Water Wells

In pumping water wells where the lift is moderate, say from 30 to 40 feet, and where the requisite submergence can be had for efficient operation, the volume of compressed air supplied to a well will seldom be less in volume than that of the amount of water entering the eduction pipe; and the volume of free air at the discharge will not be less than two or three times the volume of water. Where deep oil wells are pumped by means of air the quantity of free air by volume at the entrance of the eduction pipe will be eight or ten times the volume of the oil pumped, but when expanded to atmospheric pressure at the discharge end of the eduction pipe, the volume of air may be anywhere from 100 to 300 times the volume of oil pumped. No law governing the velocity of the rise of a bubble of air through a liquid can apply where the sum of the areas of the bubbles at any cross section is over one-half the area of the pipe and this will not permit of the volume of air being more than one-fourth of the volume of water. Therefore, even in the case of low-lift water wells, where the conditions prevailing more nearly meet the requirements for the application of the theory of the rising bubble, the necessary water preponderance does not even approximately obtain for this hypothesis.

When we carefully analyze the action of the air lift in deep oil wells and visualize the respective volumes of air and oil at different points in the column, together with the velocities, it becomes obvious that the resulting lift is due almost entirely to blast effect. In other words, the air under high velocity picks up the globules of oil and wafts them just as particles of sand are blown by a sand blast, or as water is lifted from the sea by the waterspout.

Action of Air on Wafted Liquid

This brings us to a study of the action of a vertical blast of air upon globules of wafted liquid. If we had to depend upon data available, in connection with air lift operation, we should be very severely handicapped, as no data on investigations of this kind, even if they have ever been made, is of record. Fortunately much experimentation has been done in determining the requirements as to diameters of risers in jet condensers. We find that a globule of water one millimeter in diameter will remain stationary in air when the upward velocity of the air is 4.22 meters per second. We find that the greater the diameter of the globule the greater will be the velocity of air required to sustain it. The air velocity required for sustension will be in proportion to the square root of the diameter of the globule; furthermore, we find that the density of the sustaining medium also affects its ability to hold the globules in suspension. This in proportion of the square root of the density of the medium.

From this it will be seen that if we should blow a well where the liquid is reduced to a mist with globules approximately a millimeter in diameter and where an air velocity of 4.22 meters, or about 14 feet a second, is maintained in the pipe, with an air density of one atmosphere, there would be no movement of the liquid up or down. It would practically fall through the air as fast as the blast raises it. Now, if we increase the velocity of the blast to 60 feet per second, which, in my opinion, approximates the economical velocity for deep wells at atmospheric pressure, the liquid would be raised at the rate of about 45 feet per second. Without doubt it is this effect which is responsible for what success has been attained in the blowing of deep oil wells.

It is obvious that some specific velocity will give the best results for specific conditions and it is reasonable to assume that for best performance a well should be piped in reference to velocity and density of operating medium.

Of course, no air lift is operative unless the back pressure at the entrance of the eduction pipe is less than the incoming pressure of the liquid being pumped. In lifts where the eduction pipe is small the submergence great, and both the volume of liquid and operating medium unlimited, the back pressure automatically adjusts itself to the pressure of the incoming liquid. Where the eduction pipe is large and the submergence small, the back pressure in the eduction pipe fluctuates within wide ranges; the column overloads, the air backs up in the air pipe and an erratic, violent, and spasmodic surging in the well takes place; and only at periodic intervals is the installation operative. Only that oil is ejected which happens to be in the top of the column where the pressure is reduced, the air expanded, and its velocity in consequence increased, until it is able to break up the oil body into a mist and carry it out by means of the blast effect. In other words, the air and oil in the lower eduction tube surged up and down violently with small lifting effect; finally, air in sufficient quantity slips up through the oil where it is expanded to a volume sufficiently large to meet the proportions required to secure a workable air blast condition.

The solution of our problem is to maintain everywhere in the eduction column such velocity as experimentation demonstrates to be the most effective.

Proper Diameters

To do this we must select the proper diameters of eduction pipe for the different horizons and we must also have

under control at all times not only the quantity of air but also the amount of oil that is allowed to enter the mixture. It is this last regulation, that of the oil in-take, on which depends the successful and economical operation of the deep oil well lift.

By providing in the in-take of the eduction tube and below the air orifice a pressure regulating value which will curtail or stop the in-flow of oil into the pump whenever the pressure in the eduction pipe reaches a desired head a means is provided for knowing quite accurately the pressure and velocity of the mixture of the air and oil at every point in the eduction column, it being understood that a regulated supply of operating medium is fed into the device through an orifice at the bottom, constricted enough to insure a constant supply of air into the pump.

With these conditions the mathematics of the method develops peculiar and rather astounding phenomena. In the first place, nothing is gained by excessive pressure, for regardless of pressure, it is not possible to attain velocities higher than certain critical velocities for each specific pipe diameter and depth condition.

It appears that the proper proportions for maximum efficacy requires a discharged velocity of between 60 and 100 feet per second; a velocity just above the jet of between 40 and 60 feet per second; and a pressure at the bottom of the eduction column of between 60 and 80 pounds atmospheric pressure. With these conditions prevailing, from a well 5000 feet deep, affording not less than 150 feet submergence, 700 barrels of light oil can be pumped per day with 500 feet of air per minute under a pressure not exceeding 100 pounds at the head of the well. Such a performance contemplates ideal conditions. In actual practice these figures will be distorted in accordance with variation in viscosities and densities of the oils, as well as the densities of the pumping medium; whether the well is operated by air or gas and also whether the well makes sand, or whether the oil itself contains gas in solution to be liberated as the pressure is relieved.

Where considerable natural gas is made along with the oil the method may be applied taking advantage of the gas pressure. When sufficient gas is present the wells can be made to flow by means of their own natural gas pressure without artificial assistance. If recent statistics are correct, enough gas accompanies all production to provide sufficient means for flowing by this method the total oil content of the respective pools.

Bureau of Mines Figures Show Decline in October

PRODUCTION of crude petroleum in the United States in October, 1927, according to the Bureau of Mines, Department of Commerce, amounted to 77,081,000 barrels, a daily average of 2,486,000 barrels. As compared with the daily average of September, these figures represent a decline of 17,000 barrels daily.

Production in both Oklahoma and California, the two leading States, decreased in October, causing the decline in national output. Texas, on the other hand, recorded an increase and established a new high mark for daily average production of 609,700 barrels. In the majority of other states, production declined, due both to continued low prices and to the approach of winter. Salt Creek output reached its lowest point since October, 1921.

In the Seminole, Oklahoma field, the yield averaged 426,000 barrels daily which though a decrease of 5000 barrels from the previous month, was considerably above the prediction and hope of the majority of operators.

Production in the Panhandle area continued to drop with development work remaining at a standstill.

Seal Beach output continued its downward trend, due to rather rapid declines of wells in the deeper zones.

Long Beach experienced a revival of interest during the month, as a result of this discovery of a prolific deep zone. Daily production in this field increased 4000 barrels to a total of 94,000 barrels, which compares with 96,000 barrels a year ago.

Stocks at Seminole continued to increase and amounted to 13,809,000 barrels at the end of the month.

Completions at Seminole totaled 134 for the month, the highest number of any other single month since the discovery of the field. Comparatively few new wells were started, with the result that the number of wells drilling at the end of the month was considerably below the average for the year.

Stocks of crude petroleum, while recording another substantial increase, showed the effects of increased runs to stills and decreased production at Seminole. Total stocks east of California amounted to 345,357,000 barrels, a gain over September of 5,616,000 barrels as compared with an increase in these stocks of 6,068,000 barrels the previous month. Stocks of light and heavy crude in California decreased 1,514,000 barrels as compared with a decrease of 246,000 barrels in September.

Throughput of crude at refineries gained 34,000 barrels daily, over September. The total amount run to stills was 72,141,000 barrels, or a daily average of 2,327,000 barrels. The major portion of the gain was due to increased runs of foreign crude.

Gasoline consumption showed a material decrease from that of September. Exports of this product showed a slight increase, however, with the result that stocks showed a slight reduction from the low point of the previous month. The daily average domestic demand for October was 822,000 barrels, which was a decrease from September of 13 per cent, but an increase over October, 1926, of 6.5 per cent.

Stocks of gasoline on hand at the end of the month amounted to 29,550,000 barrels, which at the current rate of total demand, represented 31 days' supply as compared with 28 days' supply on hand a month ago and 39 days' supply on hand a year ago.

Demand for kerosene continued brisk and stocks were again reduced.

The slackened demand in lubricants emphasized the decrease in motoring and resulted in a stock gain.

Production of natural-gas gasoline reached a record level during the month, when the output amounted to 143,600,000 gallons, a daily average of 4,630,000 gallons. This represents a gain over September of two per cent, over a year ago of 18 per cent.

All of the districts showed increased output, with the exception of the Rocky Mountain area. Throughout the Appalachian district the approach of winter with the resultant increased demand for natural gas, was instrumental in materially raising the output of natural-gas gasoline.

Stocks of the product at plants at the end of October amounted to 32,797,000 gallons which represents a moderate increase over the preceding month as against a considerable decrease during the previous month.

Los Angeles, Calif.—The Associated Oil Company has decided to run a string of 4¾-inch casing to 5276 feet in its Potrero discovery well to effect a water shutoff and to test a promising oil sand recently encountered. The Potrero well was rated as a commercial producer at 4707 feet but water encroachment made it necessary to seek lower levels. Several oil showings were found at different levels below 5000 feet.

Los Angeles.—Formal application has been made by the Pan-American Petroleum Company for permission to build a suitable fill and bulkhead a short way into the Pacific ocean at a point near Seacliffe, where a new oil field was recently opened up by the company. The Pan-American's discovery well in the Rincon field is in the edge of the ocean and will benefit greatly by an artificial fill. Several other companies had already made applications to construct similar fills.

Wood Preservation Means Protection From Fungus Growth

Usefulness of tank roofs and other wood used in oil industry can be greatly prolonged by proper impregnation with creosote

By W. S. WALLACE,
Sales Engineer, Celotex Company, Chicago

WHILE wood does not factor largely in modern oil practice, there are times when its use is necessary and, in some such instances, preservative treatment is advisable or imperative.

Other than sea borers, termites, and some metallic acids in concentration, the sole cause of weed decay is fungus—a low form of vegetable life which reproduces by spores, microscopic in size and freely carried from place to place by winds. For the growth of all wood destroying fungi, of which over 5000 varieties are known, air, heat, and varying degrees of moisture are necessary. Some fungi—so called "wet rot"—thrive only under conditions of excessive dampness or of high humidities; others—so called "dry rot"—require conditions of minimum moisture.

Wet rot and dry rot fungi are closely akin, but the latter do not have the long, white, hair-like root system (mycelia) of the former and are therefore invisible to the eye. With absolute saturation (immersion) or absolute dryness no fungus of either class can grow as is evidenced by the finding of Viking ships buried in swamps and mummy cases in Egyptian tombs. But the spores of either can lie dormant over long periods until moisture and temperature conditions are favorable for growth.

Lumber unimpregnated with either fungus or spores is practically unobtainable today and for many construction uses —not necessarily all—protective preservation before using is advisable. Preservatives are simply fungus poisons with which wood is saturated and are of many kinds, but those which are most toxic to most fungi are few. The essential factors in the selection of a wood preservative are the following:

1. Cost.
2. Low viscosity (for non-pressure oils only.)
3. Toxicity.
4. Permanence.
   a. Insolubility in water.
   b. Slow evaporation
5. Availability.

Corrosive sublimate is one of the very best preservatives known, but its handling is so dangerous and it is so readily soluble in water that its use is restricted. Zinc chloride is a very effective preservative, but it, too, is readily soluble in water. The best on all counts are the coal tar creosote in the form of viscous oils for pressure impregnation and fractioned oils of about 1.08 gravity for brushing, spraying, and dipping. Crude oils and their derivatives are not very toxic to fungi, but no fungus can grow or survive in a bath of oil. Protective coatings of hot bitumen tend to promote dry rot and have long since been discontinued as of more harm than good. Adequate treatment will make the cheaper woods, such as loblolly, hemlock, etc., outlast the best of woods untreated. All lumber should be dry and well seasoned before treatment.

In considering the oil to be used and the the method of treatment, it will be found that the creosote pressure oils meeting the A. R. A. (American Railway Association) specifications are not only the most toxic, but the best and, in the end, the cheapest for all marine uses and for all cases wherein possible bleeding would not be detrimental nor freights prohibitive. Pressure impregnation can be done only in specially built and costly plants which are found generally along the seaboard and inland at strategic railroad or other industrial (as mining) centers which afford large and sustained markets for treated timber. Eight pounds of creosote per cubic foot of wood is about the standard for pressure impregnation; for some special work as 12 to 20 pounds is used

For users of small quantities of lumber or for larger uses in isolated places where the combined costs of lumber plus treatment plus freights are prohibitive, practically equally satisfactory results can be had with the "brush oils." These are highly toxic, reasonably water resistant and permanent, and can be used by any one of three methods: brushing, spraying, or dipping. The last named method is the most effective, but either of the other two suffices for many industrial uses. The best of oil of this class is that developed by the Forest Products Laboratory, U. S. Department of Agriculture. This oil has a gravity of not more than 1.08, is limpid down to 40 degrees F., has a high percentage of the most toxic fraction (235 degrees to 270 degrees C.), is not readily leeched out of the wood, and is reasonable in cost. The standard impregnation—by the two-tank dipping method—for this oil is about four pounds per cubic foot of lumber; one-quarter-inch penetration is deemed adequate. It is applicable for all uses except severe marine work, it will not bleed, and it, like the pressure oils, is an absolute bar to termites. (U. S. government tests.)

A study of the uses of wood in the oil industry has led to some interesting findings. Wood tops for oil storage seem to have decayed—where decay has been found—from leaky roof coverings more certainly than from any other possible cause. Water condensation from crude oil is appreciable and constant with temperatures averaging high; it can be lessened, but not entirely eliminated. Were it not for the slightly toxic action of the gases present in the breathing zone, the under side of the roof deck and the supporting timbers above the oil line would show marked wet rot with accompanying fungus mycelia.

But the fact that these tops, when affected, show mostly dry rot working down from the top of the deck leads to the inevitable conclusion that the moisture supply has been intermittent and scanty, just as would be caused by a leaky roof covering. This might seem to be a peculiar condition of things, but it is perfectly possible for wood to be protected on one side and to rot through from the other. "Sulphur burning" has also been suggested as having been found, but this has yet to be established and there is ample reason to believe that dry rot has been mistakenly so termed.

The logical answer to possible wood top decay would, therefore, seem to lie in tight roof coverings, and such can be assured only by the most careful design and painstaking construction. Insulation, properly chosen, is not subject to fungus attack, but its structural properties and method of fabrication have a great deal to do with the functioning of the roof covering proper. If a further safeguard against dry rot is desired, it would be the part of wisdom to treat all timbers above the oil line by either the pressure or the non-pressure method; it is useless to treat timber which is to be submerged all or a greater part of the time. Ends should always be dipped or brush coated after saw cuts have been and before the timbers are nailed into place; neglect of this very essential precaution may entirely nullify the preservative treatment.

For other oil structures and equipment of wood, or of which wood is a part, the necessity for preservation can best be determined by consideration of the factors of dampness or humidity, temperature, and ventilation. Adequate ventilation inhibits and often even prevents fungus growth. Housing, for instance, in the Mid-Continent field would require preservative treatment only for sills when laid directly on the ground, unless it be for termites.

FORD TRUCKS HANDLE ONE 22-INCH JOINT AT A TIME

BUCKEYE TRACTION DITCHER AT WORK ON LINE

Long Gas Line Across East Texas Nearing Completion

Use of 30-foot welded pipe helps hurry work on 22-inch section; some interesting engineering difficulties on lateral lines

By A. R. McTEE
Staff Representative

WITH only about a month of work yet ahead, if favorable weather continues, the Dixie Gulf Gas Company's gas line from Waskom, Texas, to the Gulf Coast will be completed by January 1, and will be in operation. Approximately 168 miles of the 300 have been laid and work is progressing at the rate of five miles daily.

This line will mean availability of 150,000,000 more feet of gas for the territory and industries it is to serve. The city of Houston and several big refineries will be the chief consumers.

The system consists of 138.9 miles of 22-inch line and two branches, an 18-inch line 76.5 miles long, and a 16-inch line 64 miles long. The 22-inch section extends from Waskom, in Harrison County, to Goodrich, in Polk County. At Goodrich, the line branches, the longer section going to Port Arthur and the other to Houston. Numerous short extensions to towns along the line are in process of construction now.

In general, construction problems on the line have not been extraordinary and no unusual obstacles have been met, but a few short stretches, especially in the coastal plain, called for special engineering efforts.

The main line is being laid by the Hope Engineering & Supply Company, but the adjoining sections are let to other contractors.

On the main line five stream crossings had to be made, with several bayous. The rivers include the Sabine, Angelina, Neches, Trinity and San Jacinto. Of these the Neches was the only one that was unusual.

Due to the fact that this river has changed its course, it has a wide overflow bottom between the old bed and the new. Five manifolded, 10-inch lines, each 7200 feet long, were required for the crossing.

The line is a Dresser line throughout except highway and railroad crossing, where the joints are welded.

Pipe used was made under a new manufacturing process by the A. O. Smith Corporation. The principal feature of the process consists of joining the pipe by hydraulic pressure and then closing the seams by electric welding.

Because of the 30-foot lengths, only one joint of pipe per truck could be hauled. Transportation was greatly facilitated, however, since the right-of-way follows closely along the railroad. Roads along most of the right-of-way are improved, also simplifying hauling.

Thirteen Buckeye ditchers are being used to cut the trench. Other equipment includes two drag line machines, eight Buckeye cranes, and 40 Fordson tractors. There are six main line crews and two river crossing crews. The number of men on the payroll of the job totals 4000.

When completed, the line will have three compressor stations, one at Waskom, one at Nacogdoches, and the third near Goodrich.

The Waskom station is now nearing completion and will consist of 24 Hope gas-engine driven compressors. The other two stations will be smaller.

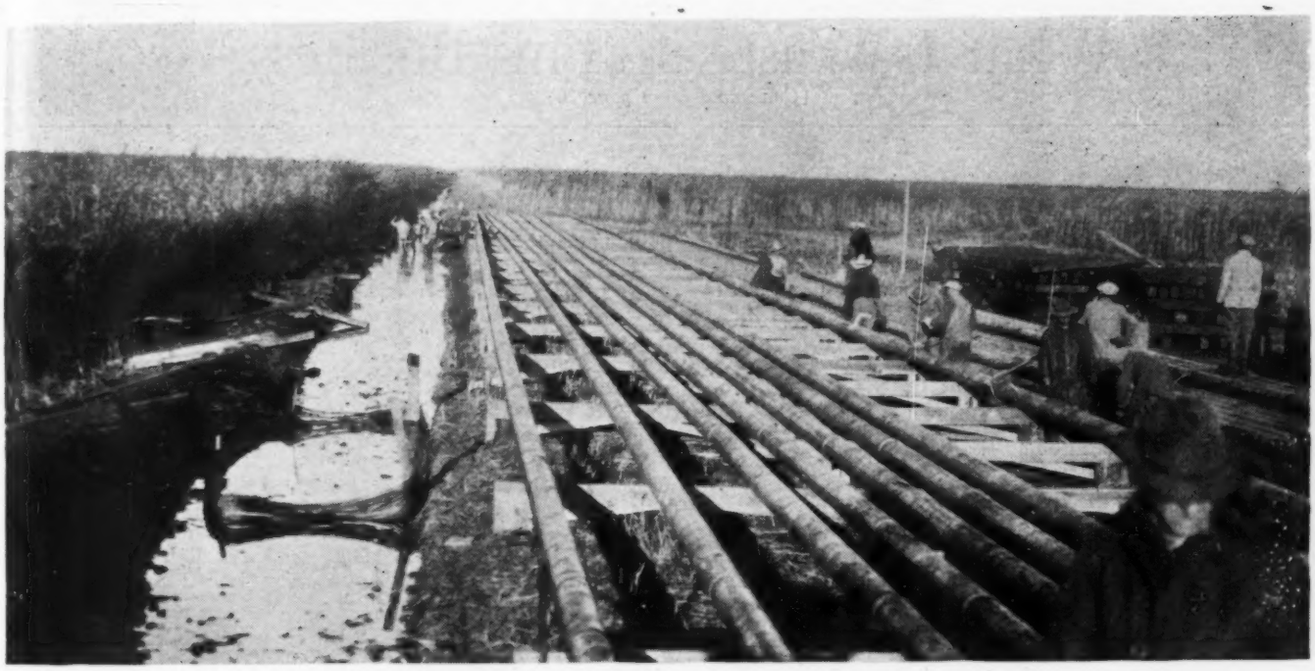
Perhaps the most tedious part of the whole distribution system in connection with the line is being constructed by the Engineering Service Corporation, of Houston, and consists of the branch from near Niederland, a short distance north of Port Arthur, to Orange, a distance of 20 miles. This is a 16-inch branch and is to serve the Pure Oil Company's refinery at Smith's Bluff, on the Neches River, The Texas Company's Neches plant, and the town of Orange.

At the Neches River crossing on the Orange branch, a special dredging job had to be done to get the line out of danger of ships. The Neches has a 30-foot channel as far as Beaumont and all pipe lines have to be 10 feet below the ship line. Two 10-inch lines were used at the crossing.

Between the Neches River and Orange, the line crossed a salt marsh adjacent to the Sabine River, which demanded utmost ingenuity from those in charge of the work.

To begin with, the swamp was so overgrown with marsh grass and switch cane that there was practically no visibility from the ground. Consequently all surveying had to be done with instruments set on towers. A base line was established on the east side of the marsh and the right-of-way across the marsh was determined by triangulation.

Pipe was welded together in sections of 300 feet at the welding rack. The welded joints were then rolled onto pontoons and



WELDED SECTIONS READY TO BE FLOATED TO POSITION IN THE SWAMP

transported along the line. The pontoons were chained together and operated by a cable and tractor using the same principle as a power ferry. The pontoons were dispatched by telephone from each point of operation since neither operator could see the other. By this method 4500 feet of line was laid at a time through the swamp.

Heavy tractor winches of the caterpillar type were used. These had extended treads so that the total load per square foot was less than 40 pounds, making it possible for the tractor to move where a man would bog.

Welding gas was generated on the job to reduce the amount of hauling necessary. Special paint is being used to coat the line through the swamp, but no decision as to whether the line will be buried or left on the surface has been made. Due to the extreme soil conditions both through the marsh and outside of it, there is considerable conjecture as to the relative value of burying the line or leaving it exposed.

A TRACTOR PULLS THE 300-FOOT SECTIONS ON PONTOONS

THIS ARRANGEMENT SOLVED THE PROBLEM OF ACCURATE LOCATION

What Is Waste in This Business?

(*Continued from page 20*)

Or, if they be consistent and fair minded men, they must cease a mere recital of the difficulties which heretofore, and now, have inhered in oil production—they must cease, if they wish to be constructive, giving mere word pictures of waste and extravagance, and must confine their energies to telling us precisely what we ought to do as a practical matter to meet their ideas. They, and we, must sooner or later concede (and the sooner, the better) that there is a clear distinction between declaring a thing to be waste in principle and declaring it to be a waste in practice. The former concerns itself with laying a foundation, an objective, of stating that which is desirable, if attainable. It has no limits except a limit of limitless words. The latter concerns itself with the actual conditions, the facts of the situation, with the very art itself. It finds its limitations in the actual oil fields themselves. No one can contribute much to this situation by merely discussing the former; but anyone who contributes even a little to the development of actual field practice will be entitled to his appropirate immortality.

But suppose worst comes to worst—if I may put it that way—and the committee of which Mr. Marland is chairman, and we ourselves, are quite unable to crystallize the many and conflicting ideas in respect to the use of energy into a universal rule, or rules, of conduct which will meet with the approval of the practical operators of this industry and of the legislative authorities, if necessary. Does that mean that progress in economy and in the intelligent use of energy will be stopped? Most emphatically no! The road of co-operation, although it will not solve the problem completely, will still be open, even if the road to compulsion be found to be one which cannot be traveled. The Federal Oil Conservation Board clearly discerned this fact. In its preliminary report of September, 1926, it states on page 25:

Economies of Conservation

"Co-operation within the industry can effect economies all along the line—in development and production, a better balancing of supply to demand, when and where the oil is needed . . . Co-operation within the industry is recommended in both research and action, in discovering the best practice and in adopting it. Field co-operation between neighboring operators in preserving back pressure and reducing the gas factor is an example of practical conservation, or if it is too late to do this, field co-operation can take the form of building up pressure by artificial means. United and co-ordinated effort is the method recommended."

In another portion of the report the Conservation Board indicates that the doubt as to the legality of co-operative agreements—which has served as an actual, imagined, or pretended barrier to co-operative action—should be removed by appropriate legislation.

The board of directors of the American Petroleum Institute at Tulsa adopted a resolution adhering in principle to these declarations of the Conservation Board, and appointed a committee, of which Judge Amos L. Beaty of The Texas Company is chairman, to recommend specific legislation which would clear up such doubts as there are on this subject.

Judge Beaty's committee has filed a report.

No doubt favorable action will be taken by the board of directors on this report.

To my mind, our soundest position will consist merely in stating our position in respect to the clarification of the laws relative to combinations, in furnishing information to appropriate committees of congress, in presenting the facts at public hearings, if any shall be held, and thus placing the ultimate responsibility upon the shoulders of the law-making authorities themselves.

In suggesting that Messrs. Thomas A. O'Donnell, J. Edgar Pew and W. S. Farish, three past presidents of the American Petroleum Institute—"three recognized leaders, conversant with and representative of all branches of the oil industry"—serve on the committee, as suggested by Secretary Work in his letter October 12, 1927, our purpose, primarily, was to show an attitude of willingness to confer with representatives of the government and the Mineral Section of the American Bar Association. In committing ourselves to discussion, to study, we are not committing ourselves to definite conclusions either as to law or policy. Nothing but good can come from having this committee, or any other fair-minded committee, grapple with the law and the facts of our situation. In fact, it is our duty to continue to co-operate with representatives of State and federal government in the consideration of any problem to which they invite our attention.

What Industry Is Trying to Do.

Notwithstanding what has been said in a critical way about the oil industry it has been thought timely to now state briefly some of the things the industry has accomplished, some of the things it has not done and what it is endeavoring to do:

The American oil industry within 70 years has grown from a single well 69 feet in depth, producing a few barrels of oil per day and representing an investment of less than $2000, to an industry, which in the United States, is second only to agriculture and the railroads.

Six hundred eighty thousand wells have been drilled between 1858 and 1927.

Today a total of over 320,000 wells have a potential daily production of nearly 3,000,000 barrels of oil. The equipment and facilities in the industry are valued at $11,000,000,000 and more than 1,250,000 people are actively engaged in its operations in addition to 1,500,000 who are directly interested through ownership of royalty or stocks and bonds.

Drilling methods have been steadily improved and productive wells have been completed at depths below 6000 feet in less time than required to complete the first shallow well in 1859.

Production methods have been improved steadily to the end that a greater proportion of oil in the ground is now brought to the surface and this recovery, even from deeper wells, accomplished in less time than possible under the methods used even a decade ago.

More than 92,000 miles of pipe lines have been built for the economical transportation of petroleum in bulk from fields to refineries, to tidewater and to market.

Tankage for the storage of over 800,000,000 barrels of crude oil and refined products has been erected in the fields, at refineries and at points of market distribution.

The oil stored in this tankage forms a safeguard to the needs of the public and has been protected against deterioration and waste from evaporation by the development and installation of gas-tight roofs and other devices.

More than 330 refineries with a daily capacity of 3,000,000 barrels of crude oil have been built for the manufacture of finished products for public use.

These products range from the lighter grades of aviation gasoline to residual coke and include the gasolines and distillates which have made possible the development of the automobile industry; gas oils, the base material from which homes are heated and lighted; fuel oil which has revolutionized marine transportation, made possible the cheap operation of railway service in territory barren of other fuel, and through the Diesel engine, reduced the cost of power developed in stationary plants; lubricating oils and greases of hundreds of grades and uses; medicinal oils; paraffine wax for candles; asphalt for road surfacing and roofing.

Improvement in refining methods and the development of the "cracking

process" has increased the gasoline output resulting from treatment of crude oil.

New methods of treating natural gas have resulted in a saving of gasoline content and made available dry gas suitable and economical for industrial and domestic use: and where such markets are not available the dry gases are now saved and worked over into useful commodities or returned under pressure to the oil producing horizons beneath the surface of the ground to either again bring more oil to the surface or be stored in the sands, reproducing thereby as nearly as possible the original condition that existed prior to the time the drill first penetrated the oil measures.

Transportation

For coastwise and foreign transportation of petroleum about 400 tankers with a total capacity of over 20,000,000 barrels are now operated by American companies, and through bunkering stations, fuel oil for ships is made available at every important port in the paths of ocean travel.

Finally through the use of over 150,000 tank cars and a much larger fleet of tank trucks, petroleum products have been distributed and made available to every American citizen at moderate and fairly uniform prices.

The American oil industry has at all times met and supplied the demand for petroleum products.

This demand, due to the remarkable growth in the industrial development of the country, has increased over ten times since the introduction of the automobile and more than doubled since the war; and, furthermore, the industry was notably successful in furnishing the extraordinary demands of war for both industrial and military use.

Petroleum engineering introduced modern practices in many areas and quite extensively in California. By 1926 a great many economies had been effected both in drilling methods and production operations, some outstanding results being obtained in proper shut-off and conservation of gas in the structures.

The very rapid development and application of the air lift principle to the oil well, by the use of air or gas, has demonstrated what research in this direction can accomplish. It also suggests the probability of profitable application to partially depleted areas at a time when oil is needed. At such times, and in such areas, we no doubt will reap the real harvest from the application of these improved methods.

What the American Oil Industry Has Not Done

The American oil industry has not profiteered. The index of prices of other commodities shows an average increase of over 50 per cent from pre-war levels, while gasoline and fuel oil are today at practically the same price as in 1913.

The oil industry has not been wasteful of its own products and every energy and every effort within the industry has been directed toward a steady reduction in losses of oil in all operations and a steady increase in the recovery of higher grade essential products and toward a more efficient utilization of these products.

The measured losses in the oil industry through all operations, from well to consumer, amounts to less than three and one-half per cent of the total volume of petroleum produced, a remarkable achievement in view of the character of product handled.

The oil industry has not been able to keep its production of raw material in exact pace with demand and periods of over-production have resulted in financial loss to operating units and in partial demoralization of the industry.

The American oil industry has not developed along economical lines due largely to conditions of land ownership outside the control of the industry. It has not been able to overcome the evils of excessive competition, and unnecessary capital has been expended in duplication of operation not only in drilling of closely spaced wells but in parallel pipe lines, neighboring refineries and in an extravagant multiplication of service stations.

This is a burden that the industry has created largely by its own activity but the public has had the advantage of complete and convenient service and of low prices.

What the American Oil Industry Is Doing

The American oil industry is now engaged in a cooperative effort to solve its own problems and to further improve all methods of operation.

The American Petroleum Institute affords a medium for free exchange of ideas and information between executives and departments of all oil companies.

Technical research problems are being studied under careful guidance and control.

Committtes are at active work in an effort to find means for more intelligent and economical development of oil lands and in a study of possible legislation which would afford greater freedom in co-operative control of production and distribution.

The membership of the American Petroleum Institute and the body of the entire industry stand pledged to co-operation with the Federal Oil Conservation Board in furtherance of President Coolidge's policy.

The American oil industry developed under private control by American initiative, energy and capital has had such rapid growth that the use of the products of petroleum for power and for lubrication has made possible the use of machinery in industries and in agriculture, while the rapid and economical transportation of passengers and freight by oil driven engines on land, on water and in the air, is the outstanding economic achievement of this century.

This is an achievement for which the American oil industry is responsible and of which both the men engaged in the industry and the entire American public may be proud.

We have had three years of debate, three years of agitation, three years of generalization. They have been constructive years. Every oil organization in America has benefited from the work that has been done. As perplexing and as baffling as the problems have been, the industry is moving forward in its practices. We are further along not merely in discussion, but in the art of producing oil, than we were three years ago, or even one year ago. To those who take counsel of their fears that something revolutionary—that some vague "control" or regulation may be imposed upon us if we don't watch out—my counsel is that they forget their fears, and join us in an effort to do everything which it is humanely practicable to do. Nothing could be more fatal for us, under present circumstances, than to take a purely negative position. Our attitude must continue to be that which was so wisely expressed by Mr. Charles Evans Hughes when he appeared in our behalf before the Federal Oil Conservation Board:

"In a general sense, it may be said that the purpose of this inquiry is to direct attention to the need and methods of conserving our oil resources. No one will question the vast importance of these resources. No one, I am sure, would dispute the desirability of conserving them. . . . As we ought to be, and I believe we are, united in the endeavor to determine deliberately and dispassionately what courses are practicable, we should not have our judgment either warped by alarms or benumbered by complacency. The question of possible courses of action, in dealing with the problems which confront the industry for whose products there is a constantly increasing demand for beneficial uses, is a severely practical one and should be dealt with as such from the start."

I have to recommend, therefore, that we take time to continue our studies as to the real function of gas and other forms of energy as they exist in the ground with oil and so use them that they will not only lift the fluid to the surface of the ground, but will do so economically.

In my opinion the oil business is entering a new era. Conditions and practices under which we have been operating have gone never to return, a change similar in character to the passing of the old Bonanza days of mining for metals; new conditions in our industry call for the exercise of strictly economical operations in every department—where in the past we have thought in terms of dollars, the future will call for study in the expediture of cents—and profit in the business will flow only to him who gets the proper viewpoint, employs and makes use of the best technical advice and who produces his goods at the least cost.

The "Why" of A. P. I. Boiler Standardization

(Continued from page 28)

glass sizes have likewise, been made uniform.

Feed water valves, including the check valve located near the boiler and a valve or cock between the check valve and the boiler, have been made standard for all sizes of A. P. I. boilers.

How to Specify A. P. I. Boilers When Ordering

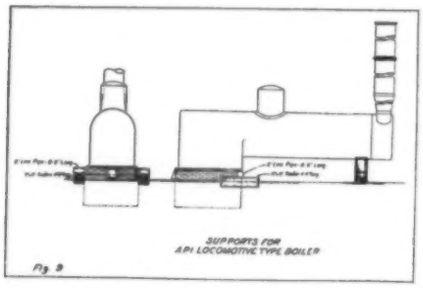
Purchasers of new boilers when ordering A. P. I. boilers should cover in their order the following points:

(a) Specify A. P. I. standard oil field boiler of size desired.
(b) Designate desired dome location, either over fire-box or over barrel of boiler.
(c) Specify whether standard list of fittings is desired.

Boilers so purchased will be the best boilers built and will not include extras not needed.

A. P. I. Operating Code

The A. P. I. Boiler Code or Code of Simplified Practice has been written by the committee with the aid of the best talent available and has been made a part of the boiler specifications or the purpose of instructing in the erection, connecting up, and operation of A. P. I. boilers.



SUPPORTS FOR A.P.I. LOCOMOTIVE TYPE BOILER

Fig. 9

Boiler Set-Ups

The code provides for a satisfactory and practical setting of locomotive or firebox type boilers. The boiler specifications refer only to this type of boiler in as much as the tendency in the field is to use locomotive type boilers instead of the Horizontal Return Tubular type which have to be rather elaborately supported and bricked in.

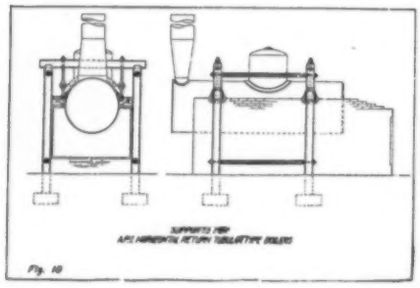
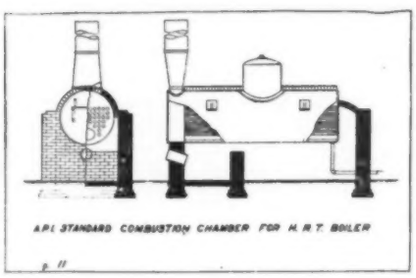


Fig. 10

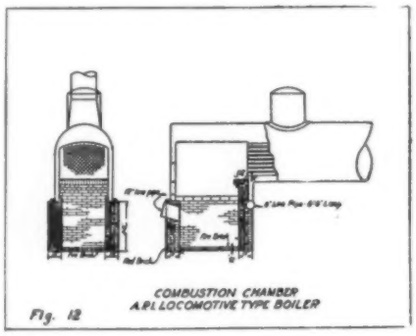
When Horizontal Return Tubular Boilers are installed they should be supported with the outside suspension type of setting amply protected from the fire.

The fire box for the Horizontal Return Tubular type should be so constructed that a combustion chamber is provided at the burner end wherein complete combustion can be had, thus effecting good boiler efficiency on fuel.



A.P.I. STANDARD COMBUSTION CHAMBER FOR H. R. T. BOILER

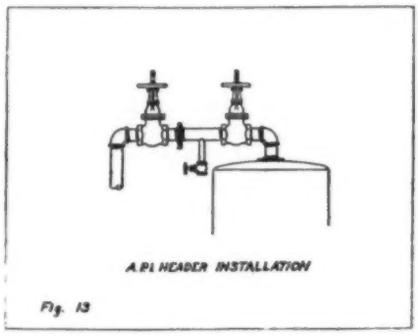
The code also recommends a combustion chamber for the locomotive type boiler to be independent of and below the firebox. By completing combustion within a leak proof combustion chamber and keeping the firebox tight maximum advantage can be taken of the firing to obtain the greatest amount of steam from the boiler.



COMBUSTION CHAMBER A.P.I. LOCOMOTIVE TYPE BOILER

Fig. 12

The code further provides an explanation of good draft which is necessary to efficient boiler firing.



A.P.I. HEADER INSTALLATION

Fig. 13

Likewise, it provides explanatory instruction for the installation of steam boilers, main valves, safety valves, blow-offs, burners, feed water connections and gages.

Under the heading of "Care and Operation" very practical and worthwhile instruction is given for the operation of the boiler with its appurtenances.

Subjects covered are: "Low Water Emergency," "Steam Gage Care," "Safety Valve Operation," "Blow-Off Usage," "Cutting-in and Firing," "Foaming," "Cutting-out or Shutting Down" and "Preparation for Storing," "Cleaning and Washing," "Repairs," etc.

Plant managers will find that much good can be gained through the obtaining and placing of a copy of this code in every oil field boiler house or at every oil field boiler installation.

Start Fourth Test on Kelso Bayou

Houston—Calcasieu Oil Company is building derrick for Watkins 1, the second test started on Kelso Bayou, Cameron Parish, Louisiana, since the completion of the Caldwell 2, discovery well on the Kelso Bayou dome, which was located by the seismograph. The Watkins 1 is located 217 feet north of the Caldwell 2. It will be drilled with the rig used on Schwing A-1, the test which was recently abandoned in the Fausse Point district, Iberia Parish.

Calcasieu Oil Company's Olevia 1, first off-set to the discovery well, is 100 feet west of it; thus the two new tests will not prove up much territory. Early this week the Olevia 1 was drilling at approximately 1000 feet.

The discovery well, Calcasieu Oil Company's Caldwell 2, began making some water about a week ago, after producing pipe line oil consistently at the rate of about 1000 barrels daily for three weeks, following its completion on November 5. The present yield is about 800 barrels of oil, net, daily.

Following the intrusion of the water, the oil is being put in storage to await completion of a treating plant, the construction of which has already been started. The dehydrator used will be one of those made by the Petroleum Rectifying Company of California.

Start Wildcat Test in Colorado County

Houston—The Rich Oil Corporation will spud in this week on its Von Rosenberg 1, a wildcat located in the John Hadden league, Colorado County, about two and one-half miles south of the town of Columbus. This is the first test ever drilled in that district. It is 175 feet north of the Mary Burtschell tract and 175 feet east of the Pearl Wooten tract. The Rich Oil Corporation has leases on 14,000 acres on the east side of the Colorado River in a solid block surrounding the location of the new test, the wildcat being not far from the center of the block.

The Rich Oil Corporation, headquarters of which are in the Bankers Mortgage Building, Houston, was formed on November 15, with James W. Rich as president, and J. H. Wooten as secretary and treasurer. In addition to Mr. Rich and Mr. Wooten, the board of directors of the company includes John A. Deering of Houston; Frederick L. Jenckes, president of the Manville Jenckes Company of Pawtucket, Rhode Island, and Isaac B. Merriman, general manager of the Manville Jenckes Company. The Manville Jenckes Company owns cotton mills in various places in Rhode Island and in North Carolina.

C. R. McCullom, chief geologist of the Union Oil Company of California, has resigned, effective January 1, and will be connected with another large oil company after that date. Desaix B. Myers, who has been assistant to the chief geologist for several years, will succeed Mr. McCullom.

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Long Beach Not Expected to Pass 150,000 Barrels

Wells on top of structure are not producing as much in deeper zone as those on edge of development

By BRAD MILLS
Staff Representative

LOS ANGELES.—As stupendous as the drilling and deepening campaign in the Long Beach field now seems, late developments seem to point to a maximum production of not more than 150,000 barrels. A careful analysis of the situation in the field shows that wells directly on top of the structure are not producing nearly as much oil in the deeper part of the zone as those near the edge of the field. The reason for such a condition is readily apparent, according to well-informed geologists, who point out that wells in the center of the field have been producing much deeper in the sand than those along the flanks.

Before the deepening fever struck the Long Beach operators, 5200 feet was the favorite level for completing wells. The depth applied to wells in practically every part of the field. As those completed along the edge were several hundred feet lower than the inside wells, it is plain that the former had little more than tapped the main producing zone. The wells completed years ago in the center of the field have been draining approximately the same layers of sand as those in which the wells deepened along the edges are now being recompleted. It is for this reason that the center wells do not respond as well to deepening as the edge producers. The thickness of the producing sand along the edges of the structure probably tallies closely with the depth in the center of the field.

Since the bulk of the wells are located fairly high on the structure, it is reasonable to suppose that completions near wells that have been producing fairly deep in the sand for years will be somewhat smaller than many of those finished along the flanks. At least two late completions have proved the theory to be correct.

Contrary to a widespread belief, the deep zone in the Long Beach field is not a new sand. It is merely a continuation of the sand that has produced almost all of the oil in the past. It is slightly broken at different levels, but it is essentially the same all the way down.

Gas Not Uniform

As evidence that the gas pressure in the center of the field is not uniformly dependable, the Superior Oil Company obtained a production of only 350 barrels from its Swaffield 1, which was recently completed on the very top of the structure. Total depth was 6150 feet and the oil was unusually clean, indicating that mechanical troubles probably were not responsible for the small production. The low gas pressure adds considerable weight to the belief that the center of the field may not be especially sensational in the lower levels.

The California Eastern Oil Company's Masser 1 was completed at 6342 feet, with an initial production of only 1100 barrels. It is believed that mechanical troubles were responsible for the poor showing. The oil is still showing a cut of 30 per cent, indicating that a poor water shutoff was effected. Much had been expected of the well, although it was located on the extreme southeastern flank of the structure.

A. T. Jergins, independent operator, completed his No. 8 as the best well of the week. Initial production was 3000 barrels from a total depth of 5810 feet. The oil is 31 gravity and is accompanied by a flow of nearly two million feet of rich gas. Jergins is drilling two other wells in the field.

Another disappointment in the field was the completion of the Shell Company's Cresson 8, which came in with an initial production of only 500 barrels. The new well is favorably located and its poor showing is attributed to the way in which it had to be completed. The well threatened to come in prematurely and was killed with hematite to control it. It is possible that the heavy fluid has temporarily blocked out the oil. The Shell is one of the most active operators in the field.

The General Petroleum Corporation has completed B. & S. 1 at 5430 feet, making it one of the shallowest of the new wells. The initial production was 1300 barrels of 26 gravity oil. The well first produced considerable water, which probably accounted for the low gravity of the oil.

The total number of locations, rigs and drilling wells is now 136, with several locations in prospect. The actual number of drilling wells probably is not more than 75.

Seal Beach Declines

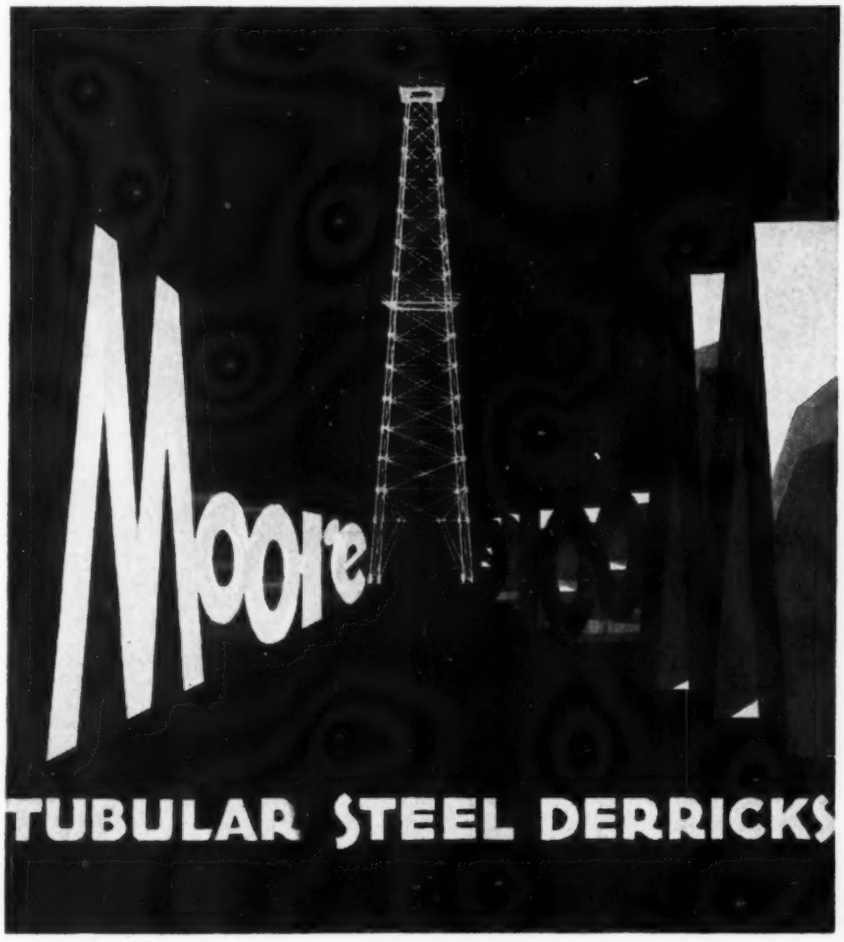
After stubbornly resisting any appreciable decline for several weeks, the Seal Beach field yielded considerable ground during the past week. Production dropped to 46,000, with a still smaller output in prospect. The Alamitos Heights area is especially quiet, with abandonments on almost every side. Idle rigs are numerous and many probably will never be active again. There is some interest in the possibility of production in still deeper sands, but the little pioneering that has been done does not hold much promise. In the main part of the field, activity is limited and a gradual decline is expected.

Rincon

Ignoring the failure of the Pan American Petroleum Company to solve the difficult water problem in the discovery well, operators in the new Rincon field are drilling ahead with all possible speed. Ten wells are drilling, six rigs have been completed and seven additional locations have been made. The Pan American is now washing over and cutting out the 6¼-inch oil string, preparatory to plugging the well to the top of the oil sand. Drilling out the plug in stages, the company hopes to locate the source of the water.

Ventura

Flowing 3100 barrels of 30 gravity oil and nearly 4,000,000 cubic feet of gas, the Associated Oil Company's McGonigle 4 has been completed in the Ventura field. The well was considerably shallower than the general run of large producers in the field, having been completed at 6208 feet. The oil is now cutting three and one-half per cent and is expected to show a still smaller percentage of water and mud after a few weeks. The Associated has had remarkable success in the Ventura field. The company holds large leases in the heart of the field and has only begun to develop its holdings. The Shell interests formerly controlled the McGonigle lease but decided its value was questionable after a comparatively shallow test failed to disclose a productive oil sand. The shut in program inaugurated several weeks ago is beginning to be felt in the field. Production has dropped to 52,000 barrels, but probably will not go much below that figure. An enormous quantity of gas is still being wasted, but there seems to be no remedy for it without shutting in a large quantity of the present production. The oil is very desirable and some of the operators need every barrel they



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can produce. With several wells nearing completion, new locations are expected to keep the number of drilling wells fairly constant.

Kern Front

Completions in the Kern Front field continue at a very consistent rate. Four new wells, three of which were located on one section, were completed during the week. While the drilling in the field should not be classed as intensive, there is a natural tendency for the companies to offset one another wherever possible. The bulk of the completions have been located within a comparatively small area. The Associated Oil Company, the most recent entry into the field, has added another well to its list of producers completed within the past month. The company's No. 45, section 23-28-27, was finished at 2300 feet with an initial production of 200 barrels. The oil is showing a nominal cut. The Bishop Corporation, which recently acquired the holdings of the Wonder Company, Ltd., has completed Fano 3 as a 200-barrel producer. Total depth was 2085 feet. The well is located on section 23-28-27. The Standard Oil Company added another well to its long list of completions by finishing No. 17, section 15-28-27. Initial production was 150 barrels and a total depth of 2355 feet. The Chanslor-Canfield Midway Oil Company, one of the pioneers of Kern County, completed No. 7, section 23-28-27, with an initial production of 150 barrels. Although the main producing sand in the field is comparatively thick, few of the wells flow. The oil string often includes more than 300 feet of perforated pipe. The gas pressure is negligible. In many respects the field is like its nearest neighbor, the Kern River area, which produces at about the same rate from month to month. The operators pay little attention to overproduction in other fields, since their problems are distinctly different from those in fields producing very large wells. The absence of flush production makes the development of the field much more sensible than intensive drilling in the prolific areas.

Round Mountain

Developments during the week in the Round Mountain field failed to reveal what may be expected of the new structure. The Associated Oil Company has reached 1560 feet in Harvey 1, section 34-28-29, but has found nothing better than sandy shale. The test is located three miles from the discovery well and production is not expected above 2000 feet. The St. Helens Petroleum Company is drilling below 3400 feet in its test on section 13-28-28 and the chance for production in that part of the field is considered very slim. Some good showings were encountered around 2300 feet, but nothing of importance has been found at a greater depth. The present formation is a hard sand with streaks of brown shale. Disregarding the failure of other wells, the Honolulu Consolidated Oil Company is pushing its development campaign and probably will be the first to complete another commercial well. The company, together with the Shell interests, recently acquired the extensive holdings of the Elbe Oil Company and will drill several wells to determine the producing limits of the field.

The Old Sunset and Midway fields are very quiet, with only a few drilling wells in the entire area. Although one of the oldest producing regions in the State, there is much room for further development. The wells are spaced far apart and a much larger production could be developed. The remarkably consistent rate at which the field has produced for years is largely due to the sensible method of development employed.

Following the completion of a 1600-barrel well, the Barnsdall Oil Company has successfully finished O'Dea 7 in the Athens-Rosecrans field. The new producer was completed in the Hoge zone at 4955 feet and is flowing 39 gravity oil. The Barnsdall Oil Company has been very successful in the field, having produced a large part of the light oil since the discovery of the pool. O'Dea 14, which was completed 10 days ago, with an initial production of 1600 barrels, continues to produce close to its initial rate. There are several producing sands in the field and the company has been unusually successful in all zones.

Efforts to develop production in questionable parts of the Brea-Olinda and East Coyote fields have resulted in several unsatisfactory ventures by the principal operating companies. The Herndon Petroleum Corporation has abandoned Queyrell 1 in the East Coyote district after going to 4300 feet. Hardly a showing was found below 4000 feet. The Union Oil Company has completed Olinda 3 in the Brea-Olinda field, but had to be satisfied with an initial production of only 50 barrels of 50 per cent cut oil. The well was originally drilled to 5325 feet but plugged back to 3800 feet for a production test. The well is disappointing in several respects. It was in this immediate vicinity that the Chanslor-Canfield Midway Oil Company drilled the deepest well in the world, only to abandon it outright less than two months ago.

Some idea as to the risk in drilling new wells in the Torrance field may be gained by the completion of the Chanslor-Canfield Midway Oil Company's Del Amo 95, which recently came in with an initial production of only 50 barrels of 13 gravity oil. The oil is cutting about 20 per cent, and is expected to continue showing a fairly high percentage of water. Water and sand are both serious problems in the field, which has the largest area of any in the Los Angeles basin.

As production slowly declines in the Huntington Beach field, it is generally believed that there will be a gradual tendency to deepen a number of shallow wells. There are three main producing zones in the field and the tendency toward the deeper sands is already apparent. At present there seems to be nothing to fear in the deep sands, although it may be possible to slightly increase the present production.

New California Wells

San Francisco.—Increased activity in the Long Beach and Rincon fields is being sharply reflected by the increase in permits granted to drill new wells, according to the weekly report of R. D. Bush, State oil and gas supervisor. The Long Beach field, with 12 permits granted, headed the list. The development of the deep sand in that area is attracting much attention. The newly-discovered Rincon field came in for its share of attention, with six new wells in prospect. Kern County, always an active prospecting area, will soon have nine additional drilling wells, if all permits granted materialize. The remaining permits were issued for new wells in various parts of the State. The total new wells this year is 1118, as compared with 1202 at the same date last year.

Sulphur Mountain

Los Angeles.—All doubt as to the value of Geis and Bradford's No. 1 well on the Sulphur Mountain structure has been erased by the announcement that the producer is still pumping more than 100 barrels of 19 gravity oil after an extended production test. The new well, which is located on section 21-4-22, really did not open an entirely new field, as shallow production had been developed near the location. It was, however, the first well of importance completed in the immediate area. The structure is north of Santa Paula and similiar to others found in the region. An extensive development program will not be carried out, as the discoverers have practically blocked the entire acreage. Another well will be drilled as soon as an electric rotary outfit can be rigged up.

San Joaquin Wildcat

Madera, Calif.—Some very good oil showings have been found by the Fort Wayne Syndicate on section 22-10-17, according to a reliable report from the well. The first signs of oil were found just below 1700 feet, with intermittent oil and gas streaks in evidence at several levels above 2240 feet. The drill pipe has been twisted off and all efforts to recover it have failed. The well is located on the eastern side of the great San Joaquin valley and is in an area far from production.

Riverside County

Riverside, Calif.—An unusually good showing of both gas and oil has been encountered by the Spindletop Oil Syndicate, which is drilling a wildcat test near the edge of the desert in Riverside County. Gas was in evidence at 3100 feet and both oil and gas showings increased to 3175 feet. The company will set a string of 6¼-inch casing to test about 75 feet of the most promising sand.

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ENGINES UNITS

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Mountain States Field Development Notes

Midwest Gets Good Well On Iles Dome

Denver, Colo.—Completion of the Midwest Refining Company's No. 4SD on Iles Dome last week for an initial production of 1500 barrels in the first Morrison sand has quickened the interest of operators in Northwestern Colorado to a noticeable extent. At 3236 feet the well developed a production of 17,000,000 feet of gas, and upon deeper drilling, it developed what is easily the largest oil production in this sand on the structure. Total depth is reported to be 3276 feet.

At 3520 feet the Texas Production Company's No. 17 is reported bottomed in the Sundance sand with 2700 feet of oil standing in the hole. At the same time this well is producing some 400 barrels per day from the Morrison sand at 3300 feet. Preparations are being made to put this well on the pump.

At Moffat Dome, six miles east of Iles Dome, the Texas Production Company's No. 10 Knowlton is drilling ahead slowly in a cavey formation, just above the Sundance. The outcome of this well is as yet uncertain and its completion is being watched closely by all of the several operators interested in the district. A producer on the structure in the Sundance sand would prove the same conditions existant as at Iles.

A report made by the registrar at United States Land Office in Denver shows that oil production at Iles Dome has increased more than 100 per cent in October over the production in September. The report shows that in October the production was 34,439 barrels, as against 15,610 barrels in September.

Texas Production Company has announced its intention of drilling two more tests immediately in the Moffat field, both of which will go to the Sundance series, although production is expected in the Morrison. Information is that one of the deep tests will be drilled on the Wick permit, and one on the Knowlton. Knowlton 10 is cleaning out at 4382 feet.

Old Woman Creek-Antelope Structures Get Tests

Lusk, Wyo.—Old Woman Creek and Antelope structures are to have an extensive drilling campaign this winter and the ensuing spring, if plans of independent operators do not go wrong. Report here is to the effect that the Antelope Creek Oil Company has already spudded its test on 11-34-56 with a 20-inch bit in the Antelope field. This structure is some 20 miles north of Harrison, Nebraska, and has been passed favorably by Charles T. Lupton, formerly of the U. S. G. S., but now an independent petroleum geologist with consulting offices in Denver. The company has 12,000 acres under lease. The first test is to be carried to 3500 feet at least, although the first producing sand is expected around 1700 feet. The Dakota is expected at 2500 feet and the Lakota at 2750 feet. A fourth sand, Unkpapa, is expected at 3200 feet.

The Antelope Creek Oil Company and the Fair Chance Oil Company have spotted a joint test for 33-37-62 on Old Woman Creek anticline. Material is being hauled in for the test, which will be spudded within a fortnight. This structure is 35 miles north of Lusk and is three miles from the discovery well on Ant Hills structure. Continental Oil Company is reported to have a rig up on 9-37-62 on this structure, and is expected to start drilling some time soon. A good showing of oil was encountered at 1422 feet by Norbeck & Nicholson on this structure in a test drilled in 1917. The oil was of asphaltic base testing 26 degrees Baume, with a 20 per cent free gasoline content, according to a report made by Glen M. Ruby, chief geologist for Marland Oil Company.

Small Show of Oil in Moffat County Test

Rock Springs, Wyo.—Reiter-Foster Oil Corporation has a showing of one-half barrel of oil in its State 1, 16-12n-100w, Moffat County, Colorado, at 1960 feet. The oil tests 41 gravity and comes from a 15-foot sand which is supposed to be above the big gas sand encountered in the Ohio Oil Company and the Sormir Petroleum Company (Myers et al), wells. It further confirms, it is said, the belief that the structure will produce oil on the flanks outside of the heavy gas pressure, or that oil will be found in the lower horizons on the top of the structure. These discoveries are supposed to be in the younger Tertiary formation, which if proved, will open a new producing horizon in the Rocky Mountain area.

Production Sold

Great Falls, Mont.—National Oil & Gas Company has sold 280 acres of producing acreage in the Kevin-Sunburst field to the Radigan-Hungerford Corporation for a cash consideration of $150,000 on a total of $500,000. The acreage includes the e se 12-34-2w, and w sw ne nw 7-34-1w, parts of the Adams and Harte leases in what is known as the Wilcox pool.

Get Gas Flow

Great Falls, Mont. — Bannatyne Oil Company is reported to have developed a flow of 1,000,000 cubic feet of gas in its test in the northeast end of the Bannatyne field. Gas is said to have been coming from the base of the Colorado formation, and to have diminished greatly upon deeper drilling. Geologists think that this indicates that the well is checking higher than the Johnson well of the California Petroleum Corporation.

Cane Creek Dome Well Making 35 Barrels

Salt Lake City, Utah—Utah Southern Oil Company's Frank Shafer 1, 6-27-21, on Cane Creek dome, the discovery well of the Moab district, is now producing some 35 barrels of oil in 250 barrels of fluid per day. Gas is said to be interfering with the operation of the pump. This company's second test of the structure will be known as John L. Shafer 1, and is about one-half mile up the Colorado River from the Frank Shafer 1. Cellar is being dug and derrick will be moved to location about 500 feet from the original location of John L. Shafer 1. A third well is to be drilled farther out on the flank of the structure, it is said, regardless of the outcome of the John Shafer well.

Will Build Two Lines From Iles Dome

Craig, Colo.—With all preliminary surveys finished, the Midwest Refining Company and the Texas Production Company have announced their intention of laying two pipe lines from the Iles Dome field in Northwestern Colorado, to railhead. The lines will both be four-inch and will cost approximately $250,000; they will have 12,000 to 15,000 barrels capacity. Midwest Refining Company's line will continue from the Williams fork pumping station to Craig, a distance of about 14 miles. Texas Production Company's will run from Iles to Hamilton, a distance of about six miles. The former now has a four-inch line from Iles to its storage tanks at the latter's Williams fork station. Texas Production Company has a four-inch line from the Moffat field to the Craig refinery.

Enlarge Salt Lake City Refinery Capacity

Salt Lake City—Utah Oil Refining Company has launched its $1,500,000 improvement program at Salt Lake City with the installation of the new battery of Hughes-Manley pressure stills which has increased the charging capacity of the new plant to 5000 barrels per day, and the total capacity to 8000 barrels. Utah Oil Refining Company is a subsidiary of the Midwest Refining Company and the total investment in the Salt Lake refinery is more than $5,000,000.

Pondera Dome

Great Falls, Mont.—The next completion expected in the Pondera Dome area af the Sweetgrass Arch tests will be that of the Whiteside Syndicate which is one of the few wells which has been able to make any progress during the recent bad weather. Total depth is 1890 feet and casing is being underreamed. Other operations are at a standstill because of weather conditions.

United States Daily Average Production

Figures below are taken from the complete revised estimates of the AMERICAN PETROLEUM INSTITUTE except for the current week, which are advance estimates issued by the A. P. I. and are subject to revision:

1926	Oklahoma	Kansas	Texas (Outside Gulf Coast)	Gulf Coast	North Louisiana	Arkansas	Eastern States	Rocky Mountain	California	United States Daily Ave.	United States Total
January	445,950	99,600	256,500	90,100	43,800	178,000	100,450	101,700	618,750	1,934,850	59,979,900
February	450,300	102,050	246,600	91,550	45,300	169,400	98,950	101,050	604,950	1,910,150	53,483,900
March	457,900	103,000	260,500	91,950	48,800	165,700	97,800	102,100	604,400	1,932,150	59,897,250
April	464,850	102,600	265,600	90,900	51,550	170,750	101,750	107,300	600,650	1,955,950	58,678,000
May	463,350	106,150	280,050	93,700	59,100	175,700	106,100	111,650	602,400	1,998,200	61,944,950
June	459,100	107,900	305,100	91,350	60,350	166,950	106,050	113,300	607,550	2,017,650	60,529,350
July	456,700	110,450	336,300	116,550	57,100	161,650	104,650	107,750	614,400	2,065,550	64,032,300
August	465,300	111,750	383,800	162,800	56,800	157,350	108,600	110,600	608,900	2,165,900	67,143,450
September	466,050	113,400	403,750	175,200	56,850	153,250	110,200	104,700	598,150	2,181,550	65,446,500
October	503,350	114,650	444,700	169,900	58,200	149,500	109,450	98,500	614,200	2,262,450	70,136,500
November	550,700	115,800	477,000	176,900	56,450	143,700	111,150	92,900	643,650	2,368,250	71,047,550
December	564,250	118,800	480,800	181,900	54,800	138,600	110,050	85,650	660,400	2,395,250	74,252,700
1927											
January	598,500	117,200	466,400	173,900	52,900	131,550	107,850	84,450	653,450	2,386,200	73,972,150
February	693,350	116,250	479,800	154,600	52,800	128,200	107,150	85,300	642,700	2,460,150	68,884,300
March	710,350	116,100	475,000	154,750	51,450	124,500	104,400	87,600	640,850	2,465,000	76,414,900
April	723,700	115,400	477,300	155,100	50,500	113,350	108,000	89,350	644,550	2,477,250	74,317,750
May	742,200	114,600	488,700	151,300	47,450	112,700	114,000	89,300	633,550	2,493,800	77,307,700
June	768,600	112,200	480,800	151,650	49,150	112,450	111,850	86,050	638,550	2,511,300	75,338,900
July	846,750	107,750	475,800	142,950	56,200	109,900	111,800	86,950	620,700	2,558,800	79,322,300
August	832,900	105,100	483,450	139,350	56,950	104,750	114,600	80,750	621,450	2,539,300	78,717,850
September	797,450	105,200	493,750	142,900	53,450	101,350	110,800	74,500	637,250	2,516,650	75,498,900
October	782,300	105,100	497,900	138,400	51,300	100,450	113,600	73,250	629,000	2,491,300	77,230,000
November 5	751,350	107,150	497,050	137,700	49,950	99,100	115,000	73,050	623,100	2,453,450	17,174,150
November 12	768,950	107,800	495,600	139,200	50,050	99,150	115,000	73,250	620,500	2,469,500	17,286,500
November 19	768,350	105,900	494,650	138,250	49,500	97,500	115,000	73,700	624,100	2,466,950	17,268,650
November 26	775,000	106,200	515,200	137,800	49,150	96,800	115,250	76,950	626,000	2,498,350	17,488,450
December 3	766,000	106,300	507,300	135,850	48,000	96,650	113,750	79,550	626,400	2,480,750	17,365,250
Increase	.....	100	.....	.....	.....	.....	.....	3,000	400	.....	.....
Decrease	9,000	.....	7,900	1,950	1,150	150	1,500	.....	.....	17,600	123,200

TEXAS

(Outside Gulf Coast)

PANHANDLE DISTRICT

	Dec. 3	Nov. 26
Hutchinson County	57,900	59,500
Gray County	17,900	15,100
Carson County	8,150	8,000
Wheeler County	1,400	1,100
Others	200	100
Totals	85,550	83,800

NORTH TEXAS

Burkburnett	12,250	12,300
Electra	12,050	12,100
Iowa Park-KMA	2,000	2,000
Wilbarger	11,650	11,500
Archer County	23,900	23,850
Clay County (Petrolia)	600	600
Baylor County	100	100
Montague and Cooke Cos.	15,900	16,000
Totals	78,450	78,450

WEST CENTRAL TEXAS

Stephens County	7,850	7,900
Eastland-Desdemona	8,100	8,200
Brown County	18,850	19,000
Coleman County	1,350	1,300
Callahan County	4,200	4,000
Shackelford County	5,450	5,350
Young County	9,500	9,600
Throckmorton County	1,400	1,350
Jack County	800	800
Palo Pinto County	500	500
Others	500	500
Totals	58,500	58,500

WEST TEXAS

Jones County	1,750	1,700
Mitchell-Scurry Cos.	3,350	3,400
Howard County	4,400	4,200
Reagan County	23,600	23,600
Crane-Upton Counties	112,100	129,400
Crockett County	2,850	2,950
Pecos County	43,100	42,200
Winkler County	37,300	30,900
Others	2,700	2,550
Totals	231,150	240,900

EAST CENTRAL TEXAS

Mexia	8,350	8,450
Currie	600	600
Richland	650	700
Wortham	2,400	2,450
Corsicana-Powell	13,400	13,500
Nigger Creek	2,150	2,250
Totals	27,550	27,950

SOUTHWEST TEXAS

Luling	14,850	14,500
Lytton Springs	1,600	1,600
Somerset	850	850
Laredo District	8,000	7,900
Piedras Pintas	....	7,900
Dale	400	350
Others	400	400
Totals	26,100	25,600
T'tl Tex. (Outside Gulf Coast)	507,300	515,200

TEXAS GULF COAST

West Columbia	8,750	9,000
Damon Mound	850	900
Big Creek	2,750	2,200
Boling	2,200	2,900
Blue Ridge	4,500	5,000
Pierce Junction	13,250	13,400
Humble	1,850	1,900
Goose Creek	7,650	7,700
South Liberty	2,300	2,500
Hull	14,150	14,000
Saratoga	1,000	1,000
Batson	1,250	1,300
Sour Lake	3,950	3,900
Spindle Top	49,500	47,550
Orange County	3,850	4,000
Barbers Hill	950	2,600
Others	2,950	2,250
Totals	121,700	122,100
Texas Total	629,000	637,300

OKLAHOMA

North Braman	2,950	3,000
South Braman	2,100	2,200
Blackwell	3,900	3,900
Hubbard	2,900	3,100
Thomas	2,050	2,150
Tonkawa	16,450	16,600
Garber	9,950	9,950
Burbank	37,250	37,850
Osage (outside Burbank)	30,050	30,450
Watchorn	1,600	1,600
Cushing	21,000	21,300
Yale Jennings	9,500	9,500
Davenport	2,600	2,600
Bristow Slick	24,850	24,900
North Okmulgee	16,150	16,200
Lyons Deaner	6,300	6,300
Stroud	1,250	1,250
Cromwell	10,850	11,000
Papoose	5,850	6,100
Wewoka	10,550	10,900
Seminole	58,450	59,600
Bowlegs	123,700	131,150
Searight	25,300	27,050
Little River	39,650	42,000
Earlsboro	177,100	171,400
Duncan District	6,800	6,800
Graham	6,450	6,450
Fox	1,950	1,950
Healdton	14,700	14,700
Hewitt	9,350	9,400
Scholem Alechem	12,500	12,500
Others	72,150	71,150
Totals	766,000	775,000

CALIFORNIA

Santa Fe Springs	38,500	39,000
Long Beach	108,500	106,500
Huntington Beach	61,500	61,000
Torrance	20,000	20,000
Dominguez	14,500	14,000
Rosecrans	9,800	10,000
Inglewood	32,000	32,000
Midway-Sunset	82,500	83,000
Ventura Avenue	53,100	52,500
Seal Beach	46,000	48,000
Others	160,000	160,000
Totals	626,400	626,000

KANSAS

Greenwood County	31,800	32,100
Florence-Covert	1,500	1,500
Peabody-Ebling	3,900	3,900
Eldorado-Towanda	14,250	14,250
Augusta-Fox Bush	4,250	4,250
Rainbow Bend	2,200	2,200
Russell	2,400	2,500
Churchill	13,700	13,700
Others	2,300	32,000
Totals	106,300	106,200

NORTH LOUISIANA

	Dec. 3	Nov. 26
Homer	4,650	4,650
Haynesville	6,950	6,950
Caddo Light	11,950	12,400
Caddo Heavy	4,050	4,050
DeSoto Red River	4,100	4,350
Elm Grove	600	700
Bellevue	1,050	1,050
Cotton Valley	5,050	5,100
Urania	9,000	9,050
Pleasant Hill	600	850
Totals North Louisiana	48,000	49,150

LOUISIANA GULF COAST

Vinton	4,600	4,950
Lockport	5,750	5,800
Evangeline	1,200	1,250
Edgerly	2,150	2,000
Others	1,400	1,700
Total Louisiana Gulf Coast	15,100	15,700
Louisiana Total	....	64,850

ARKANSAS

El Dorado	6,100	6,050
Smackover Light	9,450	9,500
Smackover Heavy	73,650	73,550
Stephens	1,200	1,200
Nevada	3,450	3,700
Lisbon	2,700	2,700
Others	100	100
Totals	96,650	96,800

MOUNTAIN STATES

WYOMING

Salt Creek	41,250	38,500
Grass Creek	2,550	2,650
Elk Basin	1,050	950
Big Muddy	2,800	2,800
Lost Soldier	2,650	2,800
Rock River	2,600	2,750
Lance Creek	1,050	1,050
Others	3,500	3,550
Totals	57,450	55,050

MONTANA

Cat Creek	1,900	1,900
Sunburst	11,000	11,000
Others	150	150
Totals	13,050	13,050

COLORADO

Moffats (Craig)	1,300	1,150
Fort Collins	2,850	3,150
Florence	750	800
Others	1,500	1,350
Totals	6,450	6,450

NEW MEXICO

Table Mesa	100	....
Artesia	1,300	1,250
Hogback	600	700
Rattlesnake	500	350
Others	100	100
Totals	2,600	2,400
Totals Mountain States	79,550	76,950

EASTERN STATES

(Including Ill., Ind., Ohio, W. Va., Pa., Ky., and N. Y.) 113,750 115,250

PRODUCTION SUMMARY

East of Rockies	1,775,200	1,795,400
United States	2,480,750	2,498,350

CRUDE OIL PRICE QUOTATIONS

CRUDE PRICE CHANGES

December 2.—Effective at the opening of the market today, Magnolia Petroleum Company reduced the price of Cotton Valley, Louisiana crude 15 cents per barrel, making the present posted price eighty-five cents.

CURRENT POSTINGS

EASTERN STATES

	Dec. 7 1927
New York Transit	2.65
Bradford District	2.65
National Transit	2.55
Southwest	2.55
Eureka	2.50
Buckeye	2.25
Macksburg	2.80
Gaines	2.60
Somerset	1.50
Cabell	1.40
Ragland	.95
Corning, 35-cent grade	1.45
Corning, 25-cent grade	1.35
Keister	1.10

CENTRAL STATES

Illinois	1.60
Indiana	1.48
Lima	1.71
Plymouth	1.33
Princeton	1.60
Waterloo	1.18
Wooster	1.57

WESTERN KENTUCKY

Posted by Stoll Refining Company for crude from Allen, Warren, Franklin, Davies, Barren,

All grades	1.50

MID-CONTINENT

Prairie, Sinclair, Gulf, Texas and Magnolia*

	Dec. 7 1927
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54
50 to 50.9 gravity	1.56
51 to 51.9 gravity	1.58
52 and above	1.60

*Magnolia's price for below 30 gravity is $1.05. Magnolia's price on Glasscock County crude is 80 cents per barrel, flat, and is also 80 cents on all crude in Howard County that comes from section 136, block 29 W & NW Railway Survey.

NORTH AND CENTRAL TEXAS

Ranger, North Texas, Mexia, Powell, Richland, Wortham, Currie, Moran, Nocona and Lytton Springs crude.

Humble O. & R. Co. and Texas Co.*

	Dec. 7 1927
Below 25 gravity	.90
25 to 25.9 gravity	1.06
26 to 26.9 gravity	1.08
27 to 27.9 gravity	1.10
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.0 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54
50 to 50.9 gravity	1.56
51 to 51.9 gravity	1.58
52 and above	1.60

Corsicana Heavy, 1.00 per barrel, posted by Magnolia.

*The Texas Company's Postings begin at 28 to 28.9.

SOUTH TEXAS

Mirando	1.00

SOMERSET
Grayburg

Below 33 gravity	$1.05
33 to 33.9 gravity	1.07
34 to 34.9 gravity	1.09
35 to 35.9 gravity	1.11
36 to 36.9 gravity	1.13
37 to 37.9 gravity	1.15
38 and above	1.17

GULF COAST

Grade "A" all companies	1.20
Gulf Coast Light Oil, Below 2	1.15
25 to 25.9 gravity	1.17
26 to 26.9 gravity	1.19
27 to 27.9 gravity	1.21
28 to 28.9 gravity	1.23
29 to 29.9 gravity	1.25
30 to 30.9 gravity	1.27
31 to 31.9 gravity	1.29
32 to 32.9 gravity	1.31
33 to 33.9 gravity	1.33
34 to 34.9 gravity	1.35
35 to 35.9 gravity	1.37
36 to 36.9 gravity	1.39
37 to 37.9 gravity	1.41
38 to 38.9 gravity	1.43
39 to 39.9 gravity	1.45
40 and above	1.47

*Humble Oil & Refining Company's postings on Gulf Coast Light stop at 35 to 35.9. Its price on all crudes above 35 is $1.37 per barrel.

Magnolia Petroleum Company's postings stop at 31 to 31.9.

(Continued on page 52)

CALIFORNIA CRUDE OIL PRICES AT THE WELL

Following are the current prices offered by Standard Oil Company for crude oil at the well: (Price per barrel of 42 gallons in fields indicated)

Gravity (degrees)	Signal Hill	Seal Beach	Huntington Beach	Inglewood	Olinda-Brea Canon	Athens-Rosecrans Dominguez	Torrance	Richfield	Whittier La Habra	Montebello	Coyote Hill	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills	Buena Vista Hills	East Hills	Coalinga	Wheeler
14-14-9	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .85	$ .85	$ .85	$ .85	$ .85	$ ..	$ .75	$ .75	$ .75	$ .75	$ .75	$ .75
15-15-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
16-16-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
17-17-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
18-18-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
19-19-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	.75	.75	.75	.75	.75	.75
20-20-9	.85	.85	.85	.85	.85	..	.85	.85	.85	.85	.85	..	..	.77	.77	.77	.76	.76
21-21-9	.86	.86	.86	.86	.86	..	.86	.86	.85	.85	.86	.85	..	.79	.79	.79	.77	.77
22-22-9	.87	.87	.87	.87	.87	..	.87	.87	.85	.85	.87	.85	..	.81	.81	.81	.78	.78
23-23-9	.88	.88	.88	.88	.88	..	.88	.88	..	.85	.88	.85	..	.83	.83	.83	.79	.79
24-24-9	.89	.89	.89	.89	.89	..	.89	.89	..	.85	.89	.85	..	.85	.85	.85	.80	.80
25-25-9	.90	.90	.90	.90	.90	.90	.90	.90	..	.86	.90	.86	..	.87	.87	.87	.81	.81
26-26-9	.92	.92	.92	.92	.92	.92	.92	.92	..	.87	.91	.87	..	.89	.89	.89	.83	.82
27-27-9	.94	.94	.94	.94	.94	.94	.94	.94	..	.88	.92	.88	..	.91	.91	.91	.85	.83
28-28-9	.96	.96	.96	.96	.96	.96	.96	.96	..	.89	.93	.89	..	.93	.93	.93	.87	..
29-29-9	.98	.98	.98	..	.98	.98	..	.98	..	.90	.94	.91	..	.96	.96	.96	.89	..
30-30-9	1.00	1.00	1.00	..	1.00	1.00	..	1.00	..	.91	.95	.93	..	.99	.99	.99	.91	..
31-31-9	1.03	1.03	1.03	..	..	1.03	..	..	..	..	..	.95	..	1.02	1.02	1.02	.93	..
32-32-9	1.06	1.06	1.06	..	..	1.06	..	..	..	..	..	.97	..	1.05	1.05	1.05	.95	..
33-33-9	..	..	..	..	..	1.09	..	..	..	..	..	.99	..	1.08	1.08	1.08	.97	..
34-34-9	..	..	..	..	..	1.12	..	..	..	..	..	1.01	..	..	..	1.11	.99	..
35-35-9	..	..	..	..	..	1.15	..	..	..	..	..	1.03	..	..	..	..	1.01	..
36-36-9	..	..	..	..	..	1.18	..	..	..	..	..	1.06	..	..	..	..	..	..
37-37-9	..	..	..	..	..	1.21	..	..	..	..	..	1.09	..	..	..	..	..	..
38-38-9	..	..	..	..	..	1.24	..	..	..	..	..	1.12	..	..	..	..	..	..
39-39-9	..	..	..	..	..	1.27	..	..	..	..	..	1.15	..	..	..	..	..	..
40-40-9	..	..	..	..	..	1.30	..	..	..	..	..	..	..	..	..	..	..	..
41-41-9	..	..	..	..	..	1.33	..	..	..	..	..	..	..	..	..	..	..	..
42-42-9	..	..	..	..	..	1.36	..	..	..	..	..	..	..	..	..	..	..	..

Get The "Official Oil Doctor's" Prognosis

Have the "Official Oil Doctor" make an analysis of your "cut oil" problem, and his prognosis will show you that "Petreco's" profit-earning possibilities will immediately increase your dividends, regardless of what proportion of your production is emulsified.

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Write for our book: "The Electrical Process for the Dehydration of Crude Oil Emulsions."

Say you saw it in The OIL WEEKLY

MARKHAM

	Dec. 7 1927
The Texas Company	
All grades	1.00

LULING

All grades	1.00

PANHANDLE

(Humble Oil & Refining Company and Magnolia Petroleum Company, Gulf Pipe Line Company, and Kay County Gas Company)*

Hutchinson, Carson and Wheeler counties, all grades .75

*Gulf and Kay County do not post in Wheeler County.

Gray County

(Humble Oil & Refining Company)

28 to 28.9 gravity	.80
29 to 29.9 gravity	.82
30 to 30.9 gravity	.84
31 to 31.9 gravity	.86
32 to 32.9 gravity	.88
33 to 33.9 gravity	.90
34 to 34.9 gravity	.92
35 to 35.9 gravity	.94
36 to 36.9 gravity	.96
37 to 37.9 gravity	.98
38 to 38.9 gravity	1.00
39 to 39.9 gravity	1.02
40 to 40.9 gravity	1.04
41 to 41.9 gravity	1.06
42 to 42.9 gravity	1.08
43 to 43.9 gravity	1.10
44 and above	1.12

(Humble Oil & Refining Company)

Crane, Upton, Crockett and Pecos counties, all grades .60

WEST TEXAS

(Humble, Gulf, Magnolia, Kay County Gas Company and Southern Crude Oil Purchasing Company.)*

Crane, Crockett, Pecos, Upton and Winkler Counties .60

*Kay County Gas Company does not buy in Winkler and Pecos Counties, and Southern does not buy in Pecos or Crockett.

Col-Tex Refining Company

Mitchell County $ .93

WYOMING-MONTANA

Wyoming

Byron	1.33
Ferris	1.60
Elk Basin	133
Grass Creek	1.33
Rock Creek	1.25
Lost Soldier	.95
Lance Creek	1.33
Mule Creek	1.10
Notches	.65
Big Muddy	1.25
Osage	1.33
Hamilton Dome	.85
Pilot Butte	1.75
Torchlight-Greybull	1.33
Lander	.80
Simpson Ridge	.80
Rex Lake	1.10
South Casper Creek-Poison Spider	1.00

Salt Creek

Midwest Refining Company

29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 and above	1.30

MONTANA

Sunburst	1.35
Cat Creek	1.33
Lake Basin	2.20

NEW MEXICO

Artesia	1.00
Hogback	1.38

CANADIAN CRUDE

	Dec. 7 1927
Oil Springs	2.18
Petrolia	2.11

*Bounty on Canadian crude is ¼ cent per gallon, or 26¼ cents per barrel.

LOUISIANA-ARKANSAS

(Standard of Louisiana, Louisiana Oil Refining Company, Gulf Refining Company of Louisiana and The Texas Co.) Homer, Haynesville, Caddo, El Dorado, De Soto and Chrichton.

Below 28 gravity	1.10
28 to 28.9 gravity	1.12
29 to 29.9 gravity	1.14
30 to 30.9 gravity	1.16
31 to 31.9 gravity	1.18
32 to 32.9 gravity	1.20
33 to 33.9 gravity	1.22
34 to 34.9 gravity	1.24
35 to 35.9 gravity	1.26
36 to 36.9 gravity	1.28
37 to 37.9 gravity	1.30
38 to 38.9 gravity	1.32
39 to 39.9 gravity	1.34
40 to 40.9 gravity	1.36
41 to 41.9 gravity	1.38
42 to 42.9 gravity	1.40
43 to 43.9 gravity	1.42
44 to 44.9 gravity	1.44
45 to 45.9 gravity	1.46
46 to 46.9 gravity	1.48
47 to 47.9 gravity	1.50
48 to 48.9 gravity	1.52
49 to 49.9 gravity	1.54

	Dec. 7 1927
50 to 50.9 gravity	1.56
51 to 51.9 gravity	1.58
52 and above	1.60

Atlantic Oil Producing Company posts this same schedule on Homer, Haynesville, and West El Dorado.

Magnolia Petroleum Company has the same posting on Pine Island, Haynesville, Eldorado and Bull Bayou.

STEPHENS

(All Companies)

Below 28	1.00
28 to 28.9 gravity	1.04
29 to 29.9 gravity	1.04
30 to 30.5 gravity	1.06
31 to 31.9 gravity	1.08
32 and above	1.10

SMACKOVER

(All Companies)

Below 24 gravity	$ .85
24 and above	1.00

Bellevue	1.25
Jennings	1.15
Vinton	1.30
Edgerly	1.30
Starks Dome	1.30
Urania	.75
Cotton Valley	.85
Calion	.85

IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

American Petroleum Institute Figures. Barrels of 42 gallons)

	Week Ended Nov. 26	Week Ended Nov. 19
AT ATLANTIC COAST PORTS—		
Baltimore	162,000	*222,000
Boston	.....	98,000
New York	832,000	355,000
Philadelphia	234,000	251,000
Others	165,000	225,000
Total	1,383,000	1,151,000
Daily average	197,571	164,429
AT GULF COAST PORTS—		
Galveston District	.....	80,000
New Orleans and Baton Rouge	163,000	222,000
Port Arthur and Sabine District	.....	.....
Tampa	.....	.....
Total	163,000	302,000
Daily average	23,286	43,143
AT ALL UNITED STATES PORTS—		
Total	1,546,000	1,453,000
Daily average	220,857	207,572
Daily average four weeks ended	212,714	217,929

RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

American Petroleum Institute Figures. Barrels of 42 gallons)

	Week Ended Nov. 26	Week Ended Nov. 19
AT ATLANTIC COAST PORTS—		
Baltimore	.....	*75,000
Boston	.....	.....
New York	77,000	251,000
Philadelphia	.....	.....
Others	.....	.....
Total	77,000	326,000
Daily average	11,000	46,571
AT GULF COAST PORTS—		
Daily average	.....	.....
TOTAL ATLANTIC & GULF COAST PORTS—	77,000	326,000
Daily average	11,000	46,571
Daily average four weeks ended	60,964	89,964
DISTRIBUTION OF TOTAL CALIFORNIA RECEIPTS IS AS FOLLOWS:		
Crude	.....	95,000
Gasoline	77,000	153,000
Gas oil	.....	78,000
Total	77,000	326,000

COMPLETIONS FOR PAST WEEK IN U.S. FIELDS

SUMMARIZED REVIEW OF FIELD RESULTS

State—	Completions This Week	Completions Last Week	Producers This Week	Producers Last Week	Gas Wells This Week	Gas Wells Last Week	Failures This Week	Failures Last Week	Initial Production This Week	Initial Production Last Week
Arkansas	2	6	..	2	1	2	1	2	....	50
California	24	16	15	13	..	..	9	3	9,925	14,195
Illinois	5	2	3	2	..	..	2	..	29	33
Indiana	2	15	1	6	..	4	1	5	12	77
Kansas	17	42	7	16	1	3	9	23	800	5,440
Kentucky	25	13	21	8	..	..	4	5	679	220
Louisiana	12	10	3	2	5	5	4	3	175	620
Michigan	1	..	1	..	..	..	..	..	20	....
New York	8	20	8	19	..	..	..	1	16	48
Ohio	42	19	18	5	12	10	12	4	693	42
Oklahoma	71	81	42	43	8	10	21	28	22,221	19,004
Pennsylvania	28	69	22	60	4	7	2	2	96	153
Texas	125	120	64	57	16	12	45	51	99,637	76,347
West Virginia	43	19	7	4	30	11	6	4	213	83
Totals	405	432	212	237	77	64	116	131	134,516	116,312
Increase this week	..	..	..	..	13	..	..	..	18,204	....
Decrease this week	27	..	25	..	..	..	15	..	....	....

NOTE—Following is the explanation of abbreviations, signs, etc., used in completion and wildcat reports: *—dry hole, abandoned well; ‡—salt water; †—junked and abandoned; ¶—million cubic feet of gas; abn—abandoned; bbls—barrels; b. s.—basic sediment; cas—casing; co—cleaning out; dk—derrick; dr—drilling; fsh—fishing; ft—feet; in—inches; loc—location; m—milling; n, s, e, w—north, south, east, west; r—reaming; sd—shut down; sdtr—sidetracking; sp—spudding; sr—straight reaming; std—standardizing; sw—salt water; td—total depth; ur—underreaming; wo—workover; woar—waiting on standard rig.

OKLAHOMA

Company, Well and Location	Initial Production Bbls.	Depth
CARTER COUNTY—		
McGahee et al, Norris 1, sw nw ne, 19-1s-2w	*	3463
CLEVELAND COUNTY—		
Magnolia, LeFevre 1, se c sw, 11-6nn-1w	*	4194
CREEK COUNTY—		
Jackson & Wise, Henderson 3, c s l ne nw, 21-16-9e	100	3012
Ted Ray Oil Co., Smiles 2, nw c ne sw, 13-17-10e	30	2497
Tom Kelly, Thomason 1, sw c se sw nw, 35-18-10e	50	2090
Ed Lee et al, Unallotted 1, c w l ne nw, 2-19-9e	5	1233
Alvard & West, Tucker 1, se c sw sw, 14-17-8e	¶10	2764
Olean Pet. Co., Harjo 2A, nw c ne sw, 13-17-8e	50	2776
GRADY COUNTY—		
Marland Oil Co. & Joe Ray, Woods 2, nw se ne, 17-3n-5w	20	2219
Woods 1, ne se ne, 17-3n-5w	15	1820
Carter Oil Co., Hawkins 2, sw c 5-3n-5w	75	2012
Garvin Drlg. Co., McGasland 1, nw c se, 17-4n-6w	¶10	1871
GRANT COUNTY—		
Markham, Flannagan et al, Sherrer 1, ne c sw, 16-26-3w	*	5369
KAY COUNTY—		
Marland Oil Co., Diller 1, nw c se, 12-26-2w	35	3625
Harris & Haun, Henzel 3, ne c sw, 15-29-1w	*	1677
LEFLORE COUNTY—		
Leflore Gas & Electric Co., 1, sw c ne, 22-7n-26e	*	1840
McINTOSH COUNTY—		
J. E. Weible, Bruner 1, sw c se nw, 36-11-16e	*	1739
MUSKOGEE COUNTY—		
J. G. Buell, Manuel 1A, sw c ne sw, 34-15-18e	¶2	1824
OKMULGEE COUNTY—		
G. Colvin, Phillips 2, sw c nw se, 19-13-11e	12	2567
OSAGE COUNTY—		
Elliott & Smith 13, nw c se sw, 20-21-12e	10	1656
Veraland Oil Co., 8, ne sw ne, 17-21-12e	10	1390
I. T. I. O. Co. 375, ne c se sw nw, 10-25-10e	¶10	2285
Marland Oil Co. 3, ne c se, 27-25-9e	100	2194
I. T. I. O., 382, sw c se, 24-27-11e	¶4	1850
386, nw ne nw, 17-27-11e	¶2	716
Prairie O. & G. Co., et al, 3, ne c, 20-37-6e	4500	2953
Winona Oil Co., 2, ne c nw ne ne, 18-29-11e	8	1040
I. T. I. O., 378, nw se ne, 29-26-11e	*	1946
51, c e l nw, 25-26-11e	*	2075
Kewanee O. & G. Co., 1, ne sw nw, 26-29-11e	*	2158
PAWNEE COUNTY—		
R. O. Freeman, et al, Wells 1A, nw se sw, 16-7e-7e	*	3117
PONTOTOC COUNTY—		
American O. & R. Co., Balcrop 6, c s l se se, 8-4n-6e	¶8	1320
La. Oil Ref. Co., Perry 5, sw se nw, 20-5n-8e	410	2566
W. R. Ramsey, Milner 2, ne nw sw, 17-5n-8e	115	2395
POTTAWATOMIE COUNTY—		
Tidal Oil Co., Watkins 7, ne nw nw, 9-9-	300	4371
Magnolia, Cowden 5, se nw sw, 4-9-5	32	4370
Sinclair, Bowers 1, nw c se, 7-7-5e	*	4571
Indep. O. & G. Co., Harbor 1, ne c, 32-9-5	*	4853
SEMINOLE COUNTY—		
I. T. I. O., Soketheche 1, ne sw ne, 1-7-	537	4449
McCulla 1, ne se nw, 1-7-6	370	4490
Camp 1, sw ne nw, 1-7-6	280	4272
Phoebe 2 "A", sw c se, 36-8-6	830	4418
Burden 1, ne nw sw, 23-8-6	65	4620
Soketheche, sw c ne, 1-7-6	*	4447
Magnolia, Franz 6, ne c nw sw, 32-8-8	200	4160
M. Davis 1, ne nw ne, 13-8-6	345	4262
Holmsley 2, nw ne se, 11-9-5	15	4359
Indep. O. & G. Co., Cobb 2, se nw ne, 7-9-8	70	3307
Empire G. & F. Co., Butner 1, sw c se, 3-9-8	25	3525
Barker 2, nw se ne, 12-9-5	3617	4241
Mid-Continent Pet. Corp., Smith 3, sw se sw, 12-8-6	250	4293
Tidal Oil Co., Harjoche 5, se nw sw, 10-8-6	630	4305
Pure, Strothers "F" 2, sw se nw, 10-8-6	375	4598
Barnsdall, Davis 3, ne nw se, 11-9-5	200	4491
The Texas Co., Wilmot 8, sw ne se, 10-9-5	1735	4391
Anderson 6, se nw se, 2-9-5	150	4533
Anderson 2, se c 2-9-5	830	4287
Twin State Oil Co., Hearn 2, sw ne se, 2-9-5	4625	4392
Shaffer O. & R. Co., Clark 5, se sw se, 1-9-5	790	4390
Sory & Swartz, Turner 1, se sw se, 26-10-5e	*	4650
Sinclair, Ellen 6, nw ne sw, 11-8-6	*	4410
Smith et al, Townsite 1, se nw nw, 27-9-6e	*	4525
STEPHENS COUNTY—		
Pearce & Brown, Wilkinson 1 "B", sw c se, 27-1s-8w	80	1697
Smith & Law, Brymer 5, sw c nw ne ne, 31-1n-8w	¶3	1375
TULSA COUNTY—		
J. Crider et al, Johnstone 2, se c sw, 15-16-12e	25	2106
Hilt et al, Oswalt 5, ne c se sw nw, 6-17-13e	300	1851
L. C. Butler, Billy 2, ne sw se, 32-17-14	*	1905
Munn Bros., Cahwoe 2, ne c sw se, 10-18-12e	*	2232
WAGONER COUNTY—		
H. W. Lampton, Rulison 2, c n l se sw, 9-15-16e	*	1280
Towner & Wittee, Luckey 1, sw c se nw, 1-18-17e	*	830
Boyd & Hanks, Escoe 4, c ne sw, 7-18-15e	*	1309

KANSAS

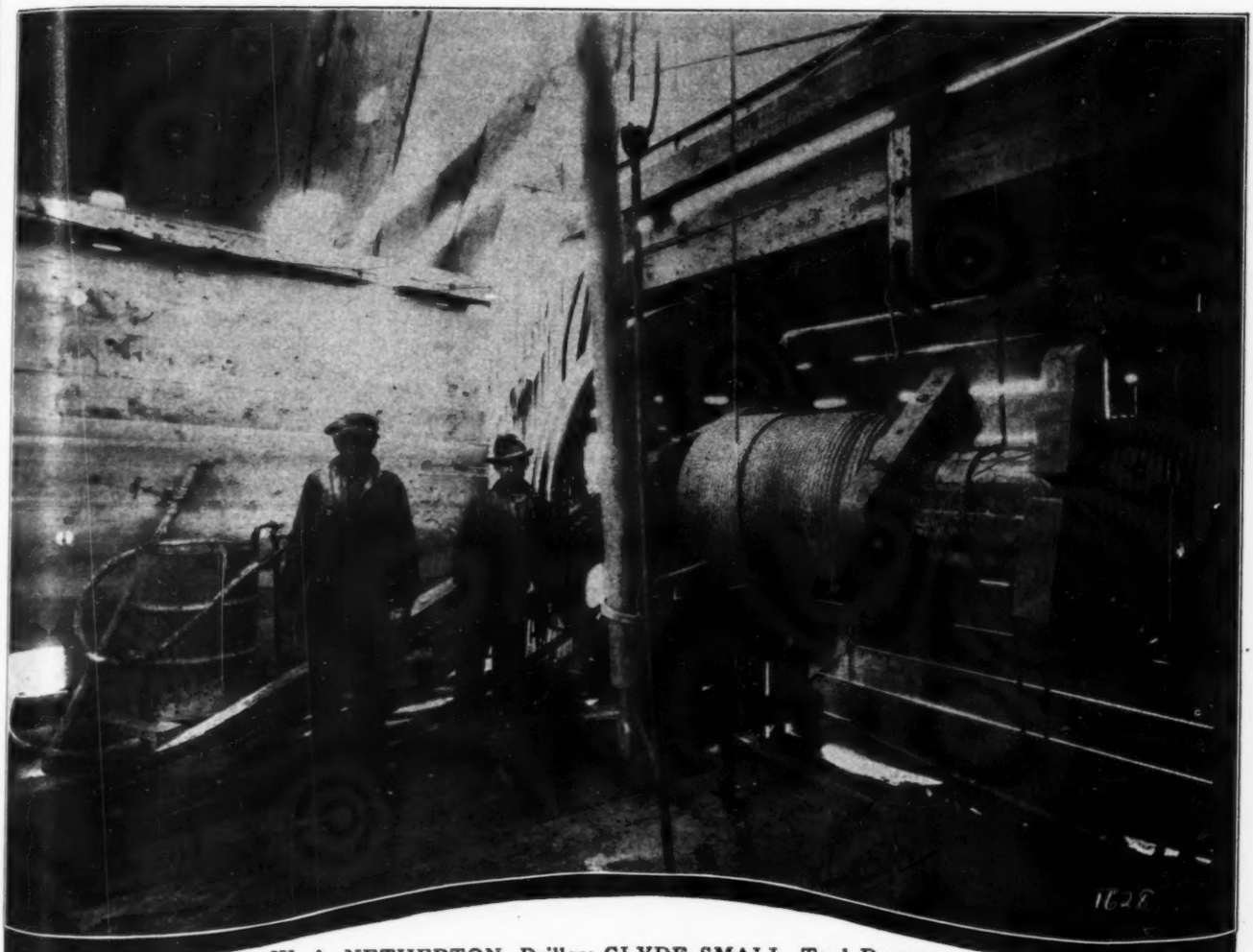
Company, Well and Location	Initial Production Bbls.	Depth
BUTLER COUNTY—		
Reeder et al, Litchey 1, se c, 26-25-5e	*	986
Liggett et al, Figge 4, sw c ne, 36-27-6e	*	2828
CHAUTAUQUA COUNTY—		
Theta Oil Co., Julian 1, c w½, 12-32-10e	15	2236
COWLEY COUNTY—		
Roxana, Harness 1, sw c nw, 19-31-3e	75	1970
ELK COUNTY—		
Union Gas Corp., Long 1, c se nw, 1-31-10e	¶7	1122
Arkansas Fuel Oil Co., Young 1, se c ne, 17-29-10e	*	2114
Elmwood Oil Co. & Phoenix Oil Co., Hawks 1, nw c, 23-30-10e	*	....
Landon et al, Willard 1, nw c ne nw, 3-30-12e	*	854
GREENWOOD COUNTY—		
Empire G. & F. Co., Schwab 2, se c ne ne, 25-22-12e	200	1720
Braden, McClure et al, Wengler 3, ne c se, 22-22-13e	40	1810
McCullough et al, Perrie 1, nw c nw nw, 30-22-13e	260	1736
Empire O. & R. Co., Roglin 1, nw c ne, 15-25-13e	10	1435
LaRob Oil Co., Wenzler 1, se c nw nw nw, 30-22-13e	*	1775
Jennings et al, Hollis 1, nw c sw, 5-23-12e	*	2415
Simmons & Rhodes, Bowles 1, se c nw, 15-24-13e	*	1662
Flintridge Pet. Co., Weirshing 4, c sw sw, 23-26-9e	*	865
SUMNER COUNTY—		
Wasson et al, Glassoway 1, ne c se sw, 14-32-12e	200	1281

EASTERN STATES

PENNSYLVANIA

Company, Well and Location	Initial Production Bbls.	Depth
BRADFORD FIELD—		
South Penn Oil Co., Fee 47	2	....
Fee 48	2	....
Jones 239	2	....
Hooker 24	2	....
Lot 6 tr, 51	2	....
S. H. Elder, Elder 4	2	....
Elder 5	2	....
J. V. Golden, Golden 12	2	....
Dinsmoor & Co., Dinsmoor 2	2	....
McSweeney & Co., Lawton 1	2	....
F. M. Johnston & Son, Franchot 3	2	....
Hazelwood Oil Co., Bingham 3	2	....
W. J. Healey, Healey 1	2	....
Jeutter Bros., Borden 1	3	....
George W. Bovaird, Bingham 391, tr, 91	2	....
T. H. Kennedy, Kennedy 5	2	....
John Franks, Borden 1	2	....
J. E. Karl & Co., Hamlin Est 2	2	....
Penn Oil Prod. & Refg. Co., Fee 10	2	....
G. C. Rice & Co., Weston 1	2	....

Company, Well and Location	Initial Production Bbls.	Depth
GREENE COUNTY—		
Carnegie Nat. Gas Co., Yeager 3	¶1¼	....
Sowers 2	¶1¼	....
Blaker 1	¶1¼	....
Moore-Tex Oil Co., John Lemley 1	50	....
Snider O. & G. Co., Snyder 1	5	....
Peoples Nat. Gas Co., Fortmark 1	*	....
Manufacturers Light & Heat Co., Fry 1	*	....
Searles 1	¶1¼	....
NEW YORK		
ALLEGANY COUNTY—		
C. M. Lippert & Co., Multrus 1	2	....
Bucher & Thropp, Lippert 1	2	....
Andrews Oil Co., Andrews 1	2	....
Western & McCaffrey, Fee 1	2	....
B. D. Turner, Turner 1	2	....
Breckenridge & Co., Fee 7	2	....
R. J. Dermitt, Dermitt 4	2	....
Isaac Willetts Est., Willetts 1	2	....
WEST VIRGINIA		
MARION COUNTY—		
Buffalo Oil Co., Grim 1	40	....
South Penn Oil Co., Campbell 8	¶1½	....
Carnegie Nat. Gas Co., Brand 1	¶1¼	....
Tennant 1	¶1¼	....
Hope Nat. Gas Co., Tennant 1	¶1½	....
CABELL COUNTY—		
Pittsburg & W. Va. Gas Co., Alberts 1	¶½	....
United Fuel Gas Co., Finley 1	¶¼	....
Miller 1	¶1	....
Wysong & James, Roberts-Vanderline 2	¶1	....
Aetna O. & G. Co., Hatfield 1	¶1¼	....
ROANE COUNTY—		
South Penn Oil Co., Stockley 62	25	....
Heck Oil Co., Conley 10	75	....
Ogden & Geary Oil Co., Unknown 1	¶18	....
Godfrey L. Cabot, Harless 1	¶1¼	....
RITCHIE COUNTY—		
West Fork O. & G. Co., Anderson 2	50	....
Hope Const. & Refg. Co., Jordan 2	*	....
South Penn Oil Co., Wilson 8	3	....
Bickerstaff 4	15	....
CALHOUN COUNTY—		
Smith & Starcher, Starcher 1	¶¼	....
Godfrey L. Cabot, Stump Hrs 1	¶1½	....
United Carbon Co., Craddock 2	¶1½	....
Gerwig O. & G. Co., Hardman 5	¶1¼	....
McCall & Co., Laughlin 1	¶1	....
GILMER COUNTY—		
C. B. Lewis & Co., Davis 1	¶1¼	....
S. G. Roberts & Co., Bell 3	¶¼	....
Creek Baker & Co., Davis 1	¶¼	....
Carnegie Nat. Gas Co., Marshall 2	*	....
LEWIS COUNTY—		
Moran Bros., Parsonage lot 1	¶¼	....
McCall Drlg. Co., Butcher 1	¶5	4238
Cumberland - Allegheny Oil Co., Price 3	¶½	....
E. G. Smith & Co., Whelan 1	*	....
LINCOLN COUNTY—		
L. R. Sweetland, Sweetland 25	¶	....
G. T. Ray & Co., Cooper 2	¶½	....
J. V. Reishman, Beheler 2	¶½	....
PLEASANTS COUNTY—		
Swingle Bros., Holdren 1	5	....
Oliver Oil Co., Oliver 1	*	....
KANAWHA COUNTY—		
United Fuel Gas Co., Snyder 1	¶½	....
MINGO COUNTY—		
Public Gas Corp., Logan Cannel Coal 18	¶1	....
WAYNE COUNTY—		
Chartiers Oil Co., Ferguson 1	¶¼	....
TYLER COUNTY—		
Sutton Bros., Blair 2	¶1	....
MONONGALIA COUNTY—		
Carnegie Nat. Gas Co., Talkington 1	¶2	....
WETZEL COUNTY—		
Carnegie Nat. Gas Co., Wade 2	*	....
WOOD COUNTY—		
B. B. Crippen, Bills 2	*	....
KENTUCKY		
WAYNE COUNTY—		
John Dillon, Phipps 4	3	....
Somerset Oil Co., Coffee 3	1	....
LEE-OWSLEY COUNTIES—		
Crit Childers, Childers 5	10	....
Atlantic Oil Prod. Co., Chadwell 1	*	....
WARREN COUNTY—		
Thompson Oil Co., Bryant 7	5	1130
McGuigan & Byle, Hunt 2	2	508
R. E. Walker, Bryant 12,	*	1126
ESTILL COUNTY—		
Superior Oil Corp., Alexander 22	2	....
Alexander 26	5	....
Waco Oil Co., Rawlins 15	5	....
Reno Oil Co., Mitchell 5	2	....
Brenner, Adams & Co., Stacey 6	*	....
JOHNSON-McGOFFIN COUNTIES—		
Reno Oil Co., Conley 9	4	....
ALLEN COUNTY—		
Mid-Southern Oil Co., Woods 18	*	252
Woods 19	90	248
DAVIESS COUNTY—		
Bert Thompson & Co., Petrie 2	5	....
Dug Bolling, Hazel 1	5	....
Tri-County O. & G. Co., Corder 1	5	....
Corder 2	10	....
OHIO COUNTY—		
Daugherty & Co., Wells 8	150	....
Wells 9	150	....
James C. Ellis, Bartlett 3	100	....
Earl Patton & Co., Wilson 5	100	....
White Plains O. & G. Co., Kelly 1	15	560
H. A. Russell & Co., Kelly 2	10	520
SOUTHEASTERN OHIO		
NOBLE COUNTY—		
Joseph Sailing & Co., Feldner 1	150	....
H. H. Moseley & Co., Morland 5	2	....
WASHINGTON COUNTY—		
Miracle Oil Co., Caldwell 2	2	....
Oneida Oil Co., German Hall 1	*	....
JEFFERSON COUNTY—		
J. E. Turner & Co., Kellemier 12	25	....
CENTRAL OHIO		
CUYAHOGA COUNTY—		
East Ohio Gas Co., Dorsey 1	5	....
Hulse & Kundtz, Standen 1	¶1½	....
Paddock 2	¶2	....
Arthur & Simpson, Nelson 1	¶1	....
Kirk 1	¶½	....
Harrison, Merkle & Co., Paddock 1	¶1	....
Camp 2	¶¾	....
H. McClellan, Camp 1	¶2¼	....
MEDINA COUNTY—		
M. C. & G. H. Rogers, Rerto 1	*	....
Empire G. & F. Co., White 1	*	....
Oko O. & G. Co., Brinker 15	30	....
Brinker 26	2	....
ASHLAND COUNTY—		
Arnold, Buffmeyer & Co., Arnold 1	*	....
Hulse & Kundtz, Arnold 1	*	....
Dreher 1	*	....
Logan Gas Co., Hay 1	¶½	....
PERRY COUNTY—		
William Cline & Co., Sowers 1	339	....
D. L. Melick, Tr., Tedrow 1	20	....
Hutchinson O. & G. Co., Hutchinson 3	*	....
LICKING COUNTY—		
Sterl C. Brown, Baughman 6	20	....
Arkansas Fuel Oil Co., Howard 2	7	....
WAYNE COUNTY—		
Harmon & George, Gable 1	¶1	....
Logan Gas Co., Cline 1	¶¾	....
COSHOCTON COUNTY—		
Cassingham & Bell Bros., Cassingham 20	¶¼	....
LORAIN COUNTY—		
Ohio Fuel Gas Co., Bartter 1	¶¼	....
HOLMES COUNTY—		
Logan Gas Co., Mosier 1	*	....
SUMMITT COUNTY—		
John Arthur, Neil 1	*	....
ATHENS COUNTY—		
Strouds O. & G. Co., Junod 2	¶	....
MUSKINGUM COUNTY—		
Logan Gas Co., Copland 1	*	....
NORTHWESTERN OHIO		
AUGLAIZE COUNTY—		
Arthur & Simpson, Gossard 1	18	1505
Charles Mertz & Co., Miller 1	15	1197
W. Young & Co., Doering 1	*	1225
DARKE COUNTY—		
Cole O. & G. Co., Disher 19	15	1260
Hoffman & Co., Cox 3	12	1268
SANDUSKY COUNTY—		
Lindy Oil Co., Boyer 1	10	1340
ALLEN COUNTY—		
C. A. Peavey, Prowant 8	10	1352
MERCER COUNTY—		
June Oil Co., Price Hrs 3	11	1146
INDIANA		
PIKE COUNTY—		
Wiser Oil Co., Ruble 2	12	1365
P. C. Andrews & Co., Atkinson 8	*	1390
ILLINOIS		
CRAWFORD COUNTY—		
Frost Oil Co., Mann 7	4	980
Thomas Flynn & Co., Sager 1	*	1085
WABASH COUNTY—		
J. S. Young & Co., Keyser 7	10	1480
Max Oil Co., Holson & Dorney 9	15	1432
Whiteside & Co., Armstrong 4	*	1500
MICHIGAN		
SAGINAW COUNTY—		
Schwinck Oil Co., Schwinck 4	20	1826
ARKANSAS		
UNION COUNTY—		
Ohio Oil Co., Crain 2, 1-17-14	¶12	3020
LOUISIANA		
CADDO PARISH—		
W. A. Cross, State Line H. & F. Club 1, 17-17-16	¶3	942
T. D. Gray et al, Hart 1, 29-21-16	15	2393
Superior Oil Co., Youree 6, 26-20-15	10	2301
OUACHITA PARISH—		
Industrial G. & D. Co., McGee 1, 3-8-4e	¶½	2189
Louisiana Dev. Co., Fee 45, 20-20-5e	¶12½	2223
RICHLAND PARISH—		
Woodley Pet. Co., Hemler 1, 31-18-7e	¶3	2478
WEBSTER PARISH—		
Magnolia, Wise 1, 30-23-9	¶34	2718
SOUTH LOUISIANA		
EDGERLY—		
Rex Pet. Co., Hunter 5	150	4000
EVANGELINE—		
Evangeline Oil Co., Conklin 1	*	1890
TEXAS		
GULF COAST		
SPINDLE TOP—		
Sun, McLean 16	2200	5100
McLean 17	3256	5000
BLUE RIDGE—		
Gordon, Folwell & Dickson, Blakely 2	500	2750
Navarro Oil Co., Robinson B-1	100	4060
Sam Watts, et al, Blakely 1	*	2700
HULL—		
Gulf, Phoenix Dev. Co. 1	70	2600
Empire G. & F. Co., Barngrover 27	125	3140
GOOSE CREEK—		
Gulf, Hoffman-Gaillard 14	15	2790
Wright A-21	15	2650
PIERCE JUNCTION—		
Associated Oil Co., Boyles 1	1760	4450
BIG CREEK—		
Gulf, T. W. Davis 43	250	3600
SARATOGA—		
Weldon Oil Co., Hooks 17	4	530
EAST TEXAS		
HARRISON COUNTY—		
Ford et al, Furrh 1, E. M. Jenkins sur	¶4½	1004
Simms Oil Co., Z. Abney 2, J. Bryant sur	¶5	1965
Tylong O. & G. Co., Vaughn 1, W. R. Anderson sur	¶4	970
PANOLA COUNTY—		
D. Thomasson, Crenshaw 1, John Womack sur	¶4	2340



W. A. NETHERTON, Driller; CLYDE SMALL, Tool Dresser

Here's another driller who knows how to get long service from a good wire line. W. A. Netherton, drilling at Earlsboro, Okla., says for both rotary and cable tool drilling

WILLIAMSPORT WIRE LINES

Telfax Tape Marked
Factory Certified

give long satisfactory service—

Some drillers are artists in their business. They "know their onions," as the slang goes. Such men seldom fail to make a good line do double the amount of service—they are careful, and know how to TAKE CARE of the line.

The service and life of a good line generally depends upon the driller, and you can generally measure his efficiency by the way he handles his equipment.

Our compliments to Mr. Netherton.

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Blackwell	Okmulgee	Arkansas City	Ranger
			Electra

Say you saw it in The OIL WEEKLY

SOUTHWEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
LIVE OAK COUNTY—		
Houston Oil Co., Cartwright 20, Mt. Lucas	¶35	2160
Encino Oil Co., Stewart 1, McWhorter sur	*	2212
REFUGIO FIELD—		
Houston Oil Co.-Pratt Hewitt, Rooks 5	¶20	2090
SAN PATRICIO COUNTY—		
Houston Oil Co., Baldwin 1, White Point	¶50	2310
NUECES COUNTY—		
Perry et al, Terrell 1, White Front	¶15	2330
GOLIAD COUNTY—		
Houston Oil Co., Pettus 4	*	4150
JACKSON COUNTY—		
Wright Bros., Drushell 6, Edna	*	2685
Lee 1	*	2670
Foltz 1	*	2640
Fuqua 2	*	2830
VAL VERDE COUNTY—		
Douglas Oil Co., Sellars 1, sec 82	*	4190
Crusoe Williams, Hollman 1	*	2940
GONZALES COUNTY—		
H. B. West, Preston 2, Whitney sur	*	1700

CENTRAL WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
BROWN COUNTY—		
Advance Oil Co., Hart 3	¶¼	1615
Barton et al, Cason Bros. 1	*	1710
Cranfill-Reynolds & Mitcham, Debusk 1	*	1400
Cranfill-Reynolds & Sun Oil Co., Smith 18	50	1351
Gulf Prod. Co., J. C. Hall 1-A	*	2182
Ditto Oil Interests, Boler 1	*	2258
Humble, Gilbreath 9	50	1311
Ratblatt et al, Jones 2	*	1403
Schaffner et al, Henson 6	15	1291
United Royalties, Barnes 1	¶1	1283
EASTLAND COUNTY—		
John W. Hooser et al, Fox 6	50	1623
Mook-Texas Oil Co., Casey 1-B	¶25-80	3022
Cul Moorman et al, Thorp 1	*	3830
Teatsorth et al, Morton 1	¶1	1476
SHACKELFORD COUNTY—		
Bridwell-Heydrick Oil Co., McKelvey 2	*	1387
Roeser-Pendleton Inc., Cook 4-B-60	50	1245

WEST TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
CRANE COUNTY—		
Gulf, McElroy 44	650	2859
Pecos Oil Co., University 9, shot	85	2961
Simms & Atlantic, University 10-D	2800	2940
HOWARD COUNTY—		
F-H-E Oil Co., Riberts 2-A	55	1873
Marland Oil Co., Chalk 2-E	150	1750
PECOS COUNTY—		
The California Co., Yates 7	15,000	1202
Gulf Prod. Co., Yates 2	10,262	1349
Humble, Smith 2-B	3840	1451
Kirby Pet. Co. & Edson Pet. Co., Tippett 1	800	1465
Marland Oil Co., Yates 6-A	1440	1033
Yates 7-A	1680	1110
Mid-Kansas & Transcontinental, Yates 9-A	3600	1009
Yates 7-C	3650	1027
Yates 1-E	500	1066
Red Bank Oil Co., Smith 2	800	1667
Simms Oil Co., Smith 3	36,000	1197
UPTON COUNTY—		
Tulsa Drilling Co. et al, Chaney 1	*	2435
WINKLER COUNTY—		
Cranfill-Reynolds et al, Hendricks 2-A	1500	2983
Humble, Hendricks 1-B	3550	2968

PANHANDLE DISTRICT

Company, Well and Location	Initial Production Bbls.	Depth
CARSON COUNTY—		
Empire G. & F. Co., Burnett 8	¶35	2535
GRAY COUNTY—		
Danciger O. & R. Co. et al, Jackson 2	2500	2985
The Texas Co., A. Chapman 1	590	2823
HUTCHINSON COUNTY—		
Phillips Pet. Co., Whittenburg-Elra 12	*	4445
R-J-W Oil Co., Cockrell 1	200	3048
Roxana, Cockrell 2	50	3045

NORTH TEXAS

Company, Well and Location	Initial Production Bbls.	Depth
ARCHER COUNTY—		
Atlantic Oil Prod. Co., Mangold 1	*	1803
L. T. Burns & The Texas Co., Burns 2	10	1513
Carey & Rhader, Farmer 2	30	1512
Consolidated Oil Co., Stevens 1	*	1126
Consolidated & Continental Oil Co., Netherton 6	*	1568
Foster & Erwin, Ball 1	*	600
Murchison Oil Co., Cowan 2	*	1117
Panhandle Ref. Co. et al, Farmer 2-B	*	1540
Seaberry & Brand, Perkins 1	8	656
Shappell Oil Co., Wilson 11-B	15	895
Wilson 18-B	5	902
BURKBURNETT—		
Ascot Co., J. E. Roller 19	15	1201
J. E. Roller 40	25	1188
J. E. Roller 41	†	1584
J. E. Roller 42	20	1187
J. E. Roller 43	*	1794
J. E. Roller 44	*	1635
W. J. Moran et al, F. P. Warren 13	25	1425
COOKE COUNTY—		
Camp-Hedrick & Oil Operators Trust Fleitman 1	40	1389
Martin et al, Bindle 2	30	1395
ELECTRA—		
G. W. Cooper et al, Waggoner Bros. 7	2	796
John O'Neil et al, Allingham 2-B	*	840
The Texas Co., Waggoner 339	*	2250
JACK COUNTY—		
Connell & Wilson, Ellis 3	10	512
Dale Oil Corp., Hanna 3	*	555
Fletcher Royalty & Dr. Co., Johnson 1	*	2501
Thedford Bros. et al, Richards & Lanier 5	10	493
K-M-A & IOWA PARK—		
C. E. Birk et al, B. F. Dutton 1	*	1265
Lenoir Oil Co., Nitschke 2	5	746
Nitschke 3	*	748
W. M. Moore et al, R. L. Crudup 3	10	695
Electra-Gulf Oil Co., Watkins 8	*	1793
Henry Hobbs et al, Henry Hodges 1	20	1525
Jaffee et al, Mitchell 8	40	1867
Mitchell 9	5	442
Mitchell 10	5	446
Mitchell 11	*	1990
O'Donohoe & Gates, Love 3	40	1818
MONTAGUE COUNTY—		
Continental Oil Co., Salmon 1-B	*	1626
SOUTH VERNON DISTRICT—		
Murchison Oil Co., Waggoner 1-D	†	618
Phillips Pet. Co., Waggoner 8-T	90	1880
Waggoner 9-T	35	2395
YOUNG COUNTY—		
Continental Oil Co., Eichelberger 1	*	1001
Foster et al, Driver 1	*	1960
Pitzer & West, Hinson 2	550	2205
Morrison 4-A	300	2229

CALIFORNIA

Company, Well and Location	Initial Production Bbls.	Depth
ATHENS-ROSECRANS—		
Barnsdall Oil Co., O'Dea 7	650	4955
BREA-OLINDA—		
Union Oil Co., Olinda 3	50	3800
EAST COYOTE—		
Herndon Pet. Corp., Querrell 1	*	4300
HUNTINGTON BEACH—		
Deck & Campbell No. 1	100	2125
H. & P. Oil Co., Y. & L. 1	200	3945
KERN FRONT—		
Bishop Corp., Fano 3, 23-28-27	200	2085
Associated Oil Co., No. 45, 23-28-27	200	2300
Chanslor-Canfield Midway Oil Co., No. 7, 23-28-27	150	2310
Standard, No. 17, 15-28-27	160	2355
LONG BEACH—		
General Pet. Corp., B. & S. 1	1300	5430
A. T. Jergins JS2	2600	5810
Shell Co., Cressen 8	500	5900
Superior Oil Co., No. 2A	600	6105
SEAL BEACH—		
Petroleum Securities Co., Bryant A7	*	5010
Lieberman 1	*	5224
Bryant B1	*	5225
Bryant 2B	*	6026
Evans Fee 2	*	4470
Bott 1	*	4682
Thurston 1	*	4663
Geick 1	*	5395
Superior Oil Co., Kenkel 1	75	5830
TORRANCE—		
Chanslor-Canfield Midway Oil Co., Del Amo 95	40	3380
VENTURA—		
Associated Oil Co., McGonigle 4	3100	6208

New Leasing Legislation Presented to President

Washington, D. C.—Amendement of the law dealing with the oil lands of the Indians, in the interest of both the Indians and of conservation, is strongly urged by Secretary of the Interior Work in his annual report, submitted to the President December 5.

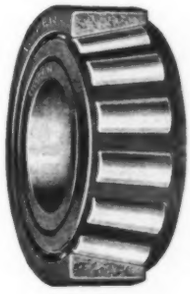
"Overproduction of oil and existing low prices emphasize the importance of my previous recommendation, which is now renewed, that legislation be enacted vesting in the Secertary of the Interior some discretion in the matter of leasing and developing the oil resources of the Osage Indian Reservation, Oklahoma," declared Secretary Work. "The secretary is now required to offer annually for lease a large area of undeveloped oil lands, regardless of overproduction or other market conditions. Such modification of law seems necessary if the Osage Tribe is to obtain the greatest ultimate benefit from the oil resources of its reservation, and is also important as a measure of conservation. On the public domain there are no unleased proven oil areas of substantial importance. Many permits for wildcatting are annually issued but very little production has resulted recently therefrom. It has been my policy, however, to aid in the restriction of production from existing leases on the public domain by relieving of drilling requirements and permitting cessation of production on existing wells in al lcases where the public interest will not suffer therefrom."

Third Line Operating Out Of Yates Field

San Angelo, Texas.—The third pipe line outlet for the Yates field was put in operation November 25 when Gulf Production Company began pumping oil through an eight-inch line from its Yates lease, located on the north end of the field, to storage on the Orient Railroad, between Hurdle and McCamey. Gulf has completed an 80,000 barrel steel tank at the latter point, and will load the crude into tank cars on a 50-car rack, having contracted to sell 5000 barrels daily to Sinclair Refining Company of Louisiana. Gulf's pipe line is about 25 miles in length, and is rated good for 10,000 barrels daily.

Gulf Pipe Line Company has postponed indefinitely the extension of its West Texas trunk line system into the Hendricks field, Winkler County, and additional tankage will be erected in the field by Gulf Production Company. The latter concern has two completed 80's on its producing lease in the northwest quarter of section 34, block B-5, Winkler County, and has placed order for four more tanks of this size to be erected immediately.

Timkens *Produce*



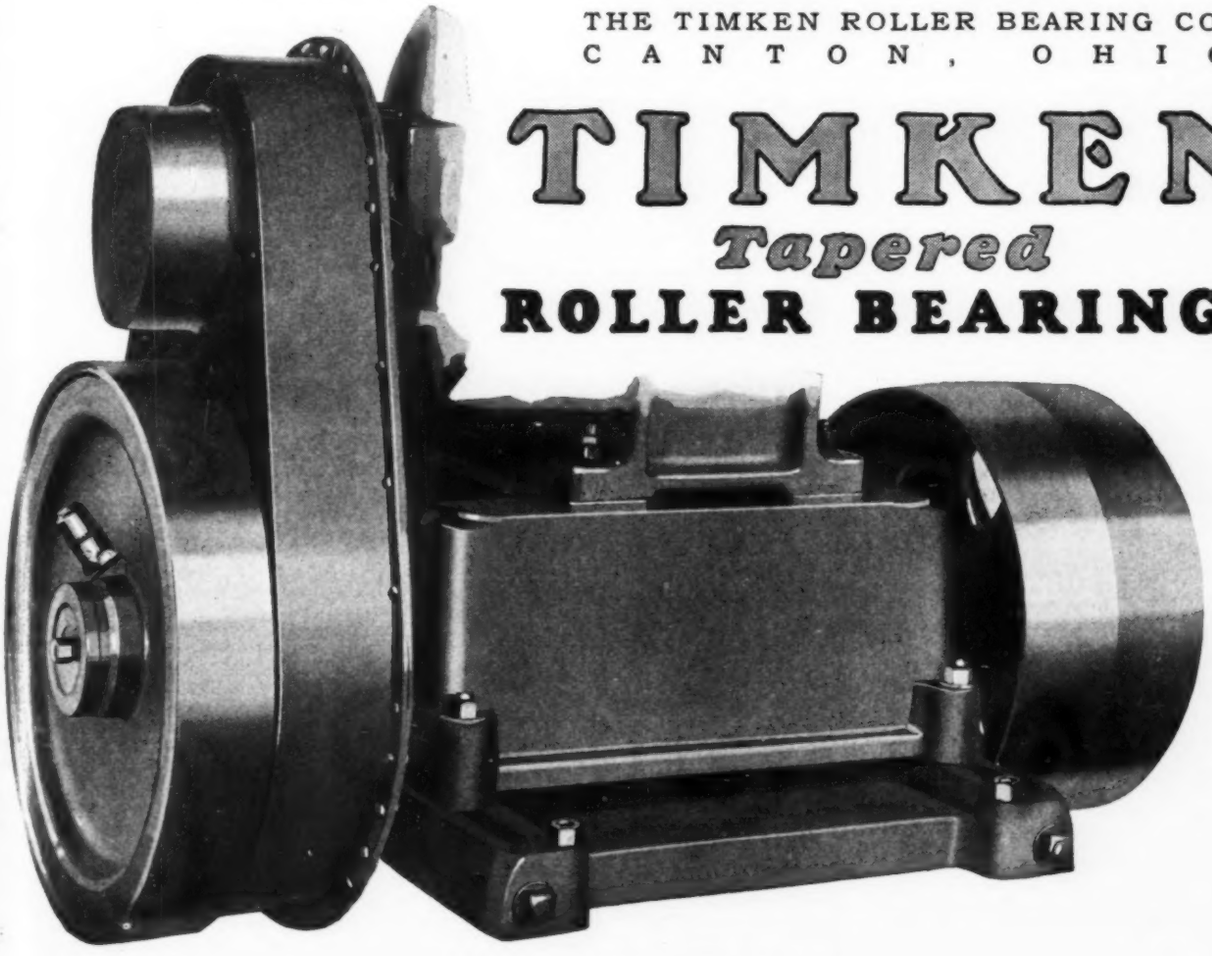
In the heavy production from the monster Seminole pool, highly specialized oil field equipment plays its part. Expressly designed to make the use of electric power most practical, the O. C. S. Diamond Timken Reduction Unit has been widely successful in the Seminole field. Its makers, seeking every means to durability, simplicity, quiet, and power economy, adopted Timken Bearings to carry the shaft.

Heavy bearing stresses from every direction are imposed by the starting load, the chain drive, the impulse load of pumping, and the operation of sand reel, calfwheel and bullwheel. Timkens meet these rigorous requirements with the full thrust capacity of Timken tapered construction, the greater load area of Timken *POSITIVELY ALIGNED ROLLS,* and the extreme shock-resistance of Timken electric steel.

That is why Timkens are *more than anti-friction bearings*—more than a means of saving power and lubricant. That is why there are more Timken Bearings in the oil fields than all other anti-friction makes combined!

Timken - Equipped by the Oil Country Specialties Mfg. Co., Coffeyville, Kansas

THE TIMKEN ROLLER BEARING CO.
C A N T O N , O H I O



TIMKEN
Tapered
ROLLER BEARINGS

PERMITS GRANTED FOR NEW WELLS

WEEKLY COMPARISON OF NEW WELLS

Following is a condensed table giving a comparison of permits or locations made for new wells during the past year in Kansas, Oklahoma, Arkansas, Louisiana, Texas, California and the Mountain States:

	Week ending Dec. 3	Previous week	Total this month	Total this year	This week last year	This month 1926	Total same date 1926	Year total 1926
Arkansas	4	5	4	308	5	5	1,013	1,046
California	36	22	36	1,108	31	31	1,324	1,389
Louisiana	18	16	18	759	21	21	1,403	1,463
Kansas	18	23	18	887	27	27	1,786	1,905
Oklahoma	55	75	55	3,462	88	88	6,331	5,584
Texas	139	135	139	8,134	159	159	12,303	12,978
Mountain States	..	..	..	431	15	15	*743	*794
Totals	270	276	270	15,089	346	346	23,903	25,159

*First four months of 1926 not included.

ARKANSAS

OUACHITA COUNTY—Humble, Murphy 4, o w d, 3-16-15, 250 ft s and 2290 ft e of nw c. Standard, Umsted 5, o w d, 32-15-15, 330 ft s and 330 ft e of nw c sw se.

UNION COUNTY—Ohio Oil Co., Crain 6, 1-17-14, nw c sw sw. Pitcher & White, Kinard 1, 17-19-15, se c sw ne.

LOUISIANA

ASCENSION PARISH — Gulf, Houston, United Lands Co. 4, 15-10s-4e, apprx 1800 ft w and 1000 ft n se c.

ACADIA PARISH—Jennings Oil Co., et al, Jennings, Fee 1, 47-9s-2w, 70 ft s and 80 ft e of nw c, lot 29, sec 47. The Texas Co., Shreveport, Latrielle A-106, 47-9s-2w, 2570 ft s along w line from nw c and 545 ft e at right angle.

BOSSIER PARISH—C. F. Davis, Shreveport, Simpson 4, 14-16n-12w, 1604 ft e and 420 ft s of nw c sw.

CADDO PARISH — W. D. Chew, Shreveport, State of Louisiana 6, 34-21n-16w, 350 ft s and 150 ft e of nw c nw sw. Shreveport Oil Corp., Shreveport, Muslow 2, 32-21n-15w, 150 ft s and 150 ft w of ne c se nw. Superior Oil Co., Camden, Ark., Youree 8, 26-20n-15w, 330 ft s and 33 ft e of nw c se nw. Woodley Pet. Co., Shreveport, Knight B-5, 39-15n-12w, 600 ft n and 1580 ft w of se c.

CAMERON PARISH — Calcasieu Oil Co., Inc. & Magnolia Pet. Co. & The Union Sulphur Co., Watkins 1, 24-12s-10w, 2,836 ft e and 1,225 ft s of nw c. C. O. Noble, et al, Lake Charles, Elender 1, 27-12s-10w, 400 ft s and 380 ft w of ne c nw.

DE SOTO PARISH—J. W. Downey, Shreveport, Dickson 1, 23-14n-13w, apprx. 300 ft n and 300 ft e of sw c se ne.

IBERVILLE PARISH—Union Sulphur Co., Sulphur, Wilbert 1 (changed lcn), 78-8s-8e, 660 ft n and 1980 ft e of sw c.

MOREHOUSE PARISH — The Texas Co., Shreveport, Meyers 1, 15-22n-7e, 1070 ft w and 300 ft n of center.

RICHLAND PARISH—Moody & Seagraves, Houston, Hemler C-1, 21-16n-6e, 1335 ft e and 660 ft n of sw c. Ouachita National Gas Co., Monroe, Cummings 1, 24-17n-5e, 1320 ft n and 660 ft w of se c.

ST. MARTIN PARISH — Ohio Oil Co., Shreveport, W. J. Burke, et al 2, 33-9s-7e, 150 ft s and 365 ft e of nw c ne nw.

WEBSTER PARISH—Magnolia Co., Shreveport, H. L. Munn 1, 29-23n-9w, 660 ft s and 660 ft e of nw c sw. Ohio Oil Co., Shreveport, Thomas Crichton 2, 21-21n-10w, 660 ft s and 330 ft w of ne c e½ ne se.

OKLAHOMA

BECKHAM COUNTY—Pease et al, Pederson 1, ne c nw, 23-9n-23w.

CARTER COUNTY—Magnolia, James 1, ne c sw, 17-2s-2w.

COAL COUNTY—I. T. I. O. Co., Cook 1, sw c nw, 10-1n-11e.

CREEK COUNTY—Empire G. & Fuel Co., Micco 1, se c nw nw, 18-14-10e. C. G. Tibbens, Friday 2, ne c nw sw se, 31-15-9e; Lane 1, nw c, 29-15-9e. Jackson & Wise, Hendrickson 4, ne c sw ne nw, 21-16-9e. L. & D. Oil Co., Townlot 2, se c ne ne, 23-17-10e. Ted Ray Oil Co., Smiles 2, nw c ne ne, 13-17-10e. Skelly Oil Co. et al, Dickson 1, se c ne, 24-17-9e. Kennedy, Horner et al, Tiger 4, c w l nw nw, 25-18-11e. Empire O. & R. Co., Barker Lee 1, se c nw nw, 36-15-7e. Silurian Oil Co., Simpson 26, ne c se sw, 8-18-7e.

GRADY COUNTY—Hamon & Cox, Smith 4, nw sw nw, 16-3n-5w. Marland Oil Co., Burke 5, sw c nw, 16-3n-5w. Oklahoma Gas Utilities Co., Farwell 7, nw c sw, 26-5n-8w.

HASKELL COUNTY — San Bois Gas Co., Hurst 1, sw c nw se, 32-9n-21e.

KAY COUNTY—Greer, Walters et al, Naylor 2, sw c ne, 31-28-1e. Harold Pet. Co., Case 6, c e l w½ se sw, 4-27-1w. Harris & Haun, Miller 1, c sw se, 20-29-1e.

LOGAN COUNTY — Mid-Continent Pet. Corp., Poston 1, se c nw, 16-18-4w.

MUSKOGEE COUNTY — W. R. Sommerville, Carver 2, c s l ne ne se, 4-13-19e. Becker & Shaffer, Kelley 1, sw cse ne, 5-14-19e. E. A. Hutchinson et al, Cherry 1, sw c ne nw, 27-14-16e. Tidal Oil Co., Sanders 8, nw c se sw, 34-15-18e. D L T Co., Mackey 1, nw c ne sw sw, 9-15-18e.

OKFUSKEE COUNTY — Phillips Pet. Co., et al, Tecumseh 1, nw ne nw, 21-10-9e. The Texas Co., Tiger 2, se c ne se, 35-11-11e. Sheldon Oil Co. et al, Jacobs 1, ne c nw nw, 22-12-11e.

OKMULGEE COUNTY—B. Shepard et al, Burgess 1A, nw c ne nw, 20-12-13e. Cassellman & Young, Lewis 1, ne c nw ne, 36-15-14e. W. B. Pine, Skidmore 3, c se nw, 10-15-14e. Amerada Pet. Corp. et al, Farmer 1, sw c se, 7-14-11e.

OSAGE COUNTY—Duffield et al, 1, nw c ne, 27-21-21e.

PAYNE COUNTY—Gardner Pet. Co., Ham 1, c sw ne, 33-19-1e.

PITTSBURG COUNTY — Quinton Spelter Co., Featherstone 1, sw c nw nw, 21-7n-17e.

PONTOTOC COUNTY—La. Oil Ref. Co., McElroy 6, ne nw se, 17-5n-8e. Snowden & McSweeney, Gilmore 1, se ne sw, 15-5n-8e.

POTTAWATOMIE COUNTY — Magnolia, Singetary, 1, se ne nw, 23-7n-4e. Gypsy Oil Co., Cecil 1, sw ne, 19-7-4. Indep. O. & G. Co., Light 1, sw c se, 18-7-4. Magnolia, Singletary 1, sw ne sw, 14-7-4. Indep. O. & G. Co., Darby Pet. Co. & Gypsy Oil Co., Hambly 2, nw c, 14-7-4e.

SEMINOLE COUNTY—Sands Pet. Co. et al, Perkins 1, se c ne, 31-8-7e. Carter Oil Co., Smith 1, sw c, 7-8-7. The Texas Co., Brinsfield 1, ne c nw, 10-9-8. McCullough Oil Co., Coody 1, se sw se, 18-9-7. Barnsdall Oil Corp., Sango 5, se sw nw, 1-9-5. Carter Oil Co., Davis 2, ne sw nw, 13-9-5.

STEPHENS COUNTY — Magnolia, Martin 2, ne nw ne, 13-1s-4w. Wirt Franklin Pet. Corp., Crews 1, se ne se, 12-1s-4w. David Malernee, Burke 1A, nw c ne ne, 34-1s-8w. Margay Oil Corp., Karschner 1, se c nw, 7-1s-8w.

TULSA COUNTY—Holmes et al 1, c n l sw se, 14-19-10e.

WAGONER COUNTY—O. A. Sewell et al, Adkins 1, sw c nw se, 13-17-15e.

KANSAS

BUTLER COUNTY—Dixie Oil Co., Albers 1, se c sw se, 21-25-4e.

COWLEY COUNTY—Kuex Drlg. Co., Matteson 1, c lot 7, blk 44, City of infield, 22-32-4e.

ELK COUNTY—Willis et al, Van Royler 1, sw c se, 34-29-12e. Conley & Winemiller, Donnell 1, nw c sw nw, 12-30-9e. Union Gas Corp., Glasscock 1, c sw ne, 11-31-10e. Landon et al, Mann 1, ne c 22-31-10e.

GREENWOOD COUNTY—White Eagle O. & R. Co., Greenwood 1, se c sw sw, 30-22-11e.

JEFFERSON COUNTY—Wichita Oil Co., Simpson 1, nw c sw sw, 19-10-17e.

McPHERSON COUNTY — The Texas Co., Chinsberg 2, nw c ne nw, 32-18-2w. Tatlock et al, Chinsberg 1, ne c nw nw, 32-18-2w.

MORRIS COUNTY—Fisher & Lauck, Strant 1, nw c se, 6-16-5e.

SHAWNEE COUNTY—McBride & Goens, Shirley 1, ne c sw, 21-12-14e.

SUMNER COUNTY — Champlin O. & R. Co., Latta "B" 3, sw c nw, 9-30-2w. De Frost Drlg. Co., Bryan 1, sw c, 25-30-2w. Vickers Pet. Co., Shore 4, ne c se, 24-31-2e. Roxana Pet. Corp. et al, Jenkins 2, ne c se, 26-31-2e. Emerich 4, Tract 5, City of Oxford, 14-32-2e. Day et al, Merimis 1, nw c se ne, 32-13-15w.

TEXAS

ARCHER COUNTY—F. C. Grebin, Wichita Falls, Waggoner 1, S3, H&TC Ry sur, 1000 ft from n and 150 ft from e line. Harry Hines, Wichita Falls, Meade 1, blk 5, A. Waieischouski sur, 150 ft from n and 750 ft from w line. D. O. Johnson, Wichita Falls, Ward 2, 1374, TE&L sur, 150 ft from e and 900 ft from s line. Burns & Long, Wichita Falls, Richardson 1, W. McCune sur, 1321 ft from n and 966 ft from e line. Harry Hines, Wichita Falls, Pace 1, blk 114, J. W. Harris sur, 150 ft from n and w lines. Jones & Holcombe, Wichita Falls, Hawley 2, blk 59, Holiday sur, 150 ft from n and 300 ft from w line.

AUSTIN COUNTY — Alexander & Lyles, Inc., Dallas, Goebel 1, 168 ft from s and 386 ft from e line. L. H. Weadock, Houston, Ward 1, No. 181, H&TC sur, sw corner.

BROWN COUNTY—A. E. Metts, Bangs, Childress 1, S 10, H&TB sur, 450 ft from s and e lines. Amerada, Cisco. Gilbreath 4, No. 4, SA&MG sur, 300 ft n of No. 1. A. H. Volz, Brownwood, Smith 1, W. H. Irion sur, 345 ft from s and w lines.

BLANCO COUNTY—C. W. Bates, Parsons, Kansas, Massey 1, No. 17, H. Manton sur, 920 ft from n and 660 ft from e line.

CALLAHAN COUNTY—Moutray Oil Co., Abilene, Flores 23, S 149, NBBB&C sur, 870 ft from n and 450 ft from e line; Flores 3, S 149, BBB&C sur, 200 ft from n and 450 ft from w line. Tom Maddox, Pioneer, Cowan 2, blk 72, C. C. S. L. sur, 150 ft from e and 450 ft from s line. Valley Oil Co., Fort Worth, Ramsey 1, S 30, D&D Asy sur, 360 ft from e and 575 ft from s line. Shadbolt & Creighton, Fort Worth, George 2, S 71, Bayland Asy., 150 ft from s and e lines.

CALDWELL COUNTY—Magnolia, Dallas, McKinney 3, J. Henry sur, 300 ft sw of No. 2. Texas Co., Houston, Roebuck 1, B. McCulloch sur, 1200 ft from sw and 600 ft from se line; Lackey 5, J. Gilbert sur, 750 ft from ne and 150 ft from se line; Osteen 1, W. C. Swearingen sur, 150 ft from s and w lines; 2, 150 ft from s and e lines.

COLEMAN COUNTY—Anzac Oil Corp. & Continental Oil Co., Gardner 1, S 741, B. Ferguson sur, 225 ft from n and 200 ft from e line. Gladys Belle Oil Co., Tulsa, Okla., Pope 9, blk 11, M. Martinez sur, 175 ft from e and 1000 ft from s line.

CROCKETT COUNTY—Gulf, Fort Worth, Thompson 3, S 71, blk 1&GN sur, 1300 ft nw of No. 2.

CRANE COUNTY—Gulf, Fort Worth, McElroy 46, S200, blk F, CCSD&RGNG sur, 650 ft se of No. 44.

COOKE COUNTY — Carey & Miller Drlg. Co., Wichita Falls, Koelzer 3, blk 13, T. Scott

sur. 350 ft w of No. 2. Hamilton & Martin, Hamilton Bldg., Wichita Falls, Texas. P. Bindle 3, T. Scott sur, 340 ft e and 306 ft s of No. 1.

CHAMBERS COUNTY—Humble, Houston, Myers 5, Wm. Bloodgood sur, 175 ft w of No. 4.

COMANCHE COUNTY — Grass Roots Oil Co., Fort Worth, Munn 2, L. C. S. L. sur, 600 ft n of No. 1.

DUVAL COUNTY — R. Driscoll, Corpus Christi, Sweedon 8, S 23, 1410 ft from s and 563 ft from w line. E. H. Buckner, Houston, Benavides 2, M. Arispe sur, 626 ft from sw and 694 ft from nw line.

EASTLAND COUNTY — States Oil Corp., Eastland, Calvert 7, S 17, blk 4, H&TC sur, 450 ft from n and 1120 ft from w line. R. H. Murray, et al, Eastland, Castlebury 1, S 36, blk 4, H&TC sur, ne corner.

FORT BEND COUNTY—Texas Co., Houston, Wheat 3, M. Young sur, 250 ft se of No. 2.

FREESTONE COUNTY—Roxana, Houston, Thiele 1, S 5, T. C. Ry. sur, se central part of lease.

GRAY COUNTY—Operator's Oil Co., Tulsa, Okla., Jackson 1, S 88, blk B2, H&GN sur, 330 ft from s and w lines. Phillips Pet. Co., Bartlesville, Okla. Son 1, S 87, blk B2, H&GN sur, 330 ft from n and 289 ft from w line. Texas Co., Wichita Falls, Bowers 3, S 91, blk B2, H&GN sur, 330 ft from s and e lines.

GUADALUPE COUNTY—T. H. Poole, Cotulla, Kreuger 1, I. Baker sur, 450 ft from n and w lines.

HARRIS COUNTY—Dave Hunt, Crosby, Adoue 1, B. Barrow sur, center. S. M. Dunbar, Houston, Hirsch 1, J. Strange sur, 190 ft from n and 50 ft from w line. Woods & Bennett, Humble, Edgar Hrs. 9, James Strange sur, 20 ft from e and 40 ft from s line.

HASKELL COUNTY — S. S. Kouri et al, Wichita Falls, Reynolds 1, S 102, I. Ry. sur, 500 ft from n and e lines.

HOWARD COUNTY—John O'Neil, Wichita Falls, Flowers 1, S 42, blk 31, T&P sur, 1320 ft from n and e lines. Coyle-Concord Oil Co., San Antonio, Roberts 2, S 156, blk 29, W&NW sur, 820 ft from s and 1480 ft from e line.

HUTCHINSON COUNTY—Skelly Oil Co., Tulsa, Okla., Armstrong 2, E. J. Bellows sur, 892 ft from s and 2741 ft from e line.

HARRISON COUNTY — Tylong O. & G. Co., Shreveport, La., Vaughn 2, W. R. Anderson sur, 211 ft from n and 494 ft from e line.

JACK COUNTY—Christie & Graham, Wichita Falls, Richards 1, BBB&C sur, 150 ft from n and 450 ft from w line. Seaboard O. & G. Co., Wichita Falls, Cullers 2, S 4, 800 ft from n and 200 ft from e line. Shaw & Rathke, Wichita Falls, Cullers 5, S 4, S. P. Ry. sur, 587 ft from e and 134 ft from s line. P. K. French, Fort Worth, Davis 1, U. J. Shackleford sur, n central. Consolidated Oil Co., Wichita Falls, Fields 1, J. Balch sur, 1600 ft from n and e lines. Holman Bros. & Leidecker, Graham, Holman 4, P. H. Rice sur, S 4, blk 2, 150 ft s and 428 ft e of No. 3.

JASPER COUNTY — Wells Oil Co., Beaumont, Norma Mills Co. 1, BBB&C sur, 300 ft from n and 2400 ft from e line.

JIM HOGG COUNTY — Alworth, Stevens, Hild & Co., Laredo, Garza 10, S 39, blk 7, ne corner.

JEFFERSON COUNTY — Yount-Lee Oil Co., Beaumont, Fee 27, blk 5, J. Douthitt sur, 19 ft from w and 118 ft from s line; Gladys 48, J. A. Veatch sur, 87 ft from e and 125 ft from s line; McFaddin 48, blk 1, P. Humphreys sur, 789 ft from e and 945 ft from n line. Battleship Oil Co., Beaumont, Parker 3, blk 4, J. A. Veatch sur, 150 ft nw of No. 2.

MONTAGUE COUNTY—Archer Drlg. Co., Wichita Falls, Rachels 1, G. Nichols sur, 150 ft from n and 461 ft from w line.

MILAM COUNTY — Moody Corp., Fort Worth, Corder 1, S 77, blk 2, CCSD&RGNG sur, (Pecos County), W. A. Jones, Minerva, Smith 3, T. J. Chambers sur, 60 ft sw of No. 1. W. S. Guthrie, Rockdale, Sheppard 1, E. Allen sur, 300 ft from n and 600 ft from e line.

MENARD COUNTY — Gibson Oil Corp., Amarillo, Russell 1, S 69, blk 3, CCSD&RGNG sur, 1320 ft from n and e lines.

MEDINA COUNTY—Chacon Oil Co., San Antonio, Jungman 2, S 31, J. Degant sur, 1500 ft from e and 500 ft from s line.

McLENNAN COUNTY — H. M. Amsler, Corpus Christi, Bird 1, T. Vega sur, 160 ft from e and 150 ft from s line.

MONTGOMERY COUNTY—J. W. Hardy, Conroe, Stewart 1, C. B. Stewart sur, sw corner.

MITCHELL COUNTY — California Co., Colorado, Foster 4, S 6, blk 9, T&P Ry sur, 1650 ft from s and 990 ft from w line.

NAVARRO COUNTY — Thelma Young et al, Corsicana, Chewing 7, J. People sur, s central. Wm. Clarkson, Jr., Corsicana, Bradley 8, R. C. S. L. sur, 300 ft w of No. 5.

NUECES COUNTY — Saxet Co., Corpus Christi, Meaney 3, 200 ft from n and 750 ft from w line. Perry, Reed & LaPrelle, Austin, Cochran 1, 300 ft from e and 350 ft from s line.

PECOS COUNTY—Gulf, Fort Worth, Smith 3, S 28, blk 194, GC&SF sur, 1504 ft from n and 937 ft from e line; 4, 887 ft from n and 937 ft from e line; 5, 330 ft from n and w lines. California Co., Colorado, Smith 6, S 35, blk 194, GC&SF sur, 330 ft from s and w lines. Marland Oil Co., Fort Worth, Yates A10, S 60, blk 1, I&GN sur, 1493 ft from n and 330 ft from w line; A9, 614 ft from n and 330 ft from w line. Kirby Pet. Co. & Edson Pet. Co., San Angelo, Harral 1, S 35, blk C4, GC&SF sur, 330 ft from n and w lines. California Co., Rankin, Smith 7, S 35, blk 194, GC&SF sur, 330 ft from e and 2028 ft from s line; 8, 1853 ft e of No. 5. Kershaw & Livingston, San Angelo, Canon 1, S 54, blk A2, T. C. Ry. sur, 330 ft from n and w lines. Simms Oil Co., Dallas, Smith 4, S 103, blk 194, GC&SF sur, 1342 ft e of No. 2. Moody Corp., Fort Worth, Corder 1, S 77, blk 2, CCS&RGNG sur, center. Humble, Wichita Falls, Smith 5A, S 36, blk 194, GC&SF sur, 330 ft from w and 275 ft from n line. W. E. Everett, Fort Worth, Field 1, S 3, blk 206, center.

POTTER COUNTY—Priarie O. & G. Co., Ranger, Bivins 2, S 39, blk M20, G&M sur, 660 ft from s and e lines. R. J. W. Oil Co., Amarillo, Cockrell 1, S3, blk B3, D&SE sur, 240 ft from n and 860 ft from w line; 2, 240 ft from n and 330 ft from w line.

PALO PINTO COUNTY—G. A. Clements, Ranger, Broomfield 1, T. Grubbs sur, ne corner.

SHACKLEFORD COUNTY—Sterling O. & G. Co., Abilene, McLemore 6, M. A. Wood sur, 690 ft from e and 450 ft from s line. Kone Prod. Co., Cisco, Selkade 1, 570, TE&L sur, 150 ft from ne and 150 ft from sw line. T. G. Shaw, Fort Worth, Edgar 19, S 20, Bayland Asy. sur, 300 ft n of No. 6; 20, 300 ft n of 15. Sterling O. & G. Co., Abilene, McLemore 7, M. A. Wood sur, 150 ft from s and 885 ft from w line. Big State Oil Corp., Dallas, Russ-Webb 3, S 22, blk 11, T&P sur, 300 ft n of No. 1. Bridwell & Heydrick Oil Co., Wichita Falls, McKelvey 1, S 9, blk 11, T&P sur, 150 ft from n and 500 ft from e line. Engel & Kiser, Albany, Mathews 1, S 33, E. T. Ry. sur, 175 ft from e and 150 ft from s line. Continental Oil Co., Wichita Falls, Jones 21, blk 72, L. A. L. sur, 300 ft e of No. 10. Southern Pet. Explo. Co., Abilene, Dyer 5, S 63, blk 11, T&P sur, 450 ft from w and 235 ft from s line. South & Shattuck, Dallas, Wofford 1, H. Holt sur, 150 ft from sw and 600 ft from se line. Roeser & Pendleton, Inc., Fort Worth, Alexander 1, 577, TE&L sur, 150 ft from nw and 750 ft from ne line.

STEPHENS COUNTY — F. C. Clark, Breckenridge, Riddle 3, S 67, blk 4, T&P Ry. sur, 400 ft n of 2. W. D. Conway et al, Ranger, Gardenhire 1, S 47, blk 6, T&P sur, 900 ft from w and 600 ft from s line.

SAN PATRICIO COUNTY — Saxet Co., Corpus Christi, Dunn 8, Dunn-Rachal sur, 1500 ft from n and 811 ft from e line; 10, 4040 ft from n and 813 ft from e line; White Point Co. 2, 1789 ft from w and 600 ft from n line; 3, 600 ft from n and w lines.

UPTON COUNTY — Orient Oil Operating Co., Wichita, Kansas, KCM&O Ry. 2, S 3, GC&SF sur, 880 ft ne of No. 1.

WICHITA COUNTY — Ascot Co., Wichita Falls, Roller 45, W. A. Grady sur, 150 ft from n and 450 ft from e line. Pet. Prod. Co., Wichita Falls, Love B 5, blk 11, W. S. Kennard sur, 300 ft s of No. 3. G. E. Ridgeway, Wichita Falls, Denny 4, blk 27, Cowherd sur, 300 ft nw of No. 2. Shappell Oil Co., Wichita Falls, Kemp & Kempner 10, blk 19, W. V. F. L. sur, 150 ft from n and e lines. Texas Co., Wichita Falls, Waggoner 337, H&TC sur, se corner. J. C. Jennings et al, Wichita Falls, Jennings 1, S 12, HT&B sur, 150 ft from s and e lines. Kimbell-Bostie, Burkburnett, Erickson 4, SA&MG sur, center. Vergate Oil Co., Tulsa, Watkins 1, blk 46, W. V. F. L. sur, 158 ft e of center of w line.

WINKLER COUNTY — Magnolia, Dallas, Hendricks 4, S 29, blk B5, 660 ft s of 1; 5, 660 ft s of 4. Atlantic Oil Prod. Co., Dallas, Hendricks D2, S 29, blk B5, School sur, 330 ft from n and e lines. Dixie & Southern Crude Oil Purchasing Co., Shreveport, La., Hendricks 1, S 30, blk B5, School sur, 330 ft from n and e lines; Hutchins 1, S 47, blk 26, 330 ft from n and e lines.

WILBARGER COUNTY — Darsey & Tidwell, Wichita Falls, Jones 1, S 47, blk 16, H&TC sur, 150 ft from s and w lines. Petroleu Prod. Co., Wichita Falls, Waggoner C 1, S 21, blk 3, H&TC sur, 150 ft from s and w lines. Texas Co., Wichita Falls, Waggoner B2, S 17, blk 4, H&TC sur, 205 ft from n and w lines; Waggoner D1, S 43, MEP&P sur, 1320 ft from n and 2640 ft from w line; Waggoner E1, S 24, blk 4, H&TC sur, 205 ft from n and w lines.

WHARTON COUNTY — Weed-Gayle Oil Co., Beaumont, Bay 7, S. F. Austin sur, 60 ft from nw and 485 ft from ne line. Geo. E. Colvin, Houston, Gulf 1, S. F. Austin sur, 70 ft from w and 30 ft from n line. Southern Explo. Co., Houston, Mullins 1, S. F. Austin sur, 50 ft from n and e lines.

WHEELER COUNTY — A. A. Kaufhold, Shamrock, Wallace 1, S 47, blk 23, H&GN sur, 330 ft from n and e lines. Texas Co., Wichita Falls, Morgan 2, S 93, blk 17, H&GN sur, 330 ft from n and w lines.

WEBB COUNTY — Colon Schott, Laredo, Bruni 1, S 835, blk 3, Albercas sur, 700 ft from e and 160 ft from s line.

YOUNG COUNTY — Robert Oil Corp., Breckenridge, Keen 3, 3401, TE&L sur, 300 ft e of No. 2; Stewart 1, D. Dawson sur, 2970 ft from w and 1240 ft from n line. Conner, Son & Claughley, Wichita Falls, McCluskey 11, 3415, TE&L sur, 80 ft from w and 200 ft from s line.

ZAPATA COUNTY—O. W. Killam, Laredo, Benavides 1, S 12, blk 13, H&GN sur, 500 ft from n and 150 ft from e line; Lopez 1, S 75, blk 16, SK&K sur, 200 ft from s and 700 ft from e line.

CALIFORNIA

HUNTINGTON BEACH—Allen Brown No. 4, 10-6-11. John Morris No. 1, 10-6-11. E. A. Fannell Co., Inc., No. 2A, 10-6-11. Dunn-Christensen No. 1, 10-6-11.

KERN COUNTY—Milham Explo. Co. No. 2, 8-28-23. Elbe Oil Land Dev. Co. No. 1, 20-28-29. Brown-Hammond Oil & Tool Co. No. 1, 14-11-9.

KERN FRONT—Bishop Corp., No. 4, 23-28-27. California Pet. Corp., Cole 1, 26-28-27; Lehmann 2, 23-28-27. Kern River Oil Fields of California, Ltd., No. 3, 26-28-27.

LONG BEACH—George F. Getty, Inc., L. B. 17, 30-4-12. Shell Co., Alamitos 30, 29-4-12; Martin Comm. 4, 29-4-12; Alamitos 29, 29-4-12; Alamitos 31, 29-4-12. Richfield Oil Co., Green 6, 29-4-12. California Pet. Corp., Brown 3, 29-4-12; McDavid 3, 29-4-12; Lewis 2, 19-4-12; Harlow 9, 19-4-12; Reedy-Dubois 2, 30-4-12; Martin Comm. 4, 29-4-12.

MIDWAY—Standard, No. 51, 29-31-24.

PIRU—Continental Oil Co., No. 4, 36-4-18.

RICHFIELD — Standard Oil Co., Vejar 3, 34-3-9.

RINCON—Petroleum Explo. Co. No. 1, 17-3-24. Pan-American Pet. Co., Hobson Fee 1, 17-3-24; Hobson Fee 2, 17-3-24; Hobson Fee 3, 17-3-24; Hobson Fee 4, 17-3-24. General Pet. Corp., Hobson 1-A, 8-3-24.

SANTA BARBARA — The Twin States Oil Co., No. 1, . . -4-27.

SOUTH MOUNTAIN—Oak Ridge Oil Co., Harvey 22, 13-3-21.

TEMBLOR—R. B. Jackson & C. H. Chamberlan No. 1, 36-29-20.

VENTURA—Petroleum Securities Co., Orton 6, 28-3-23.

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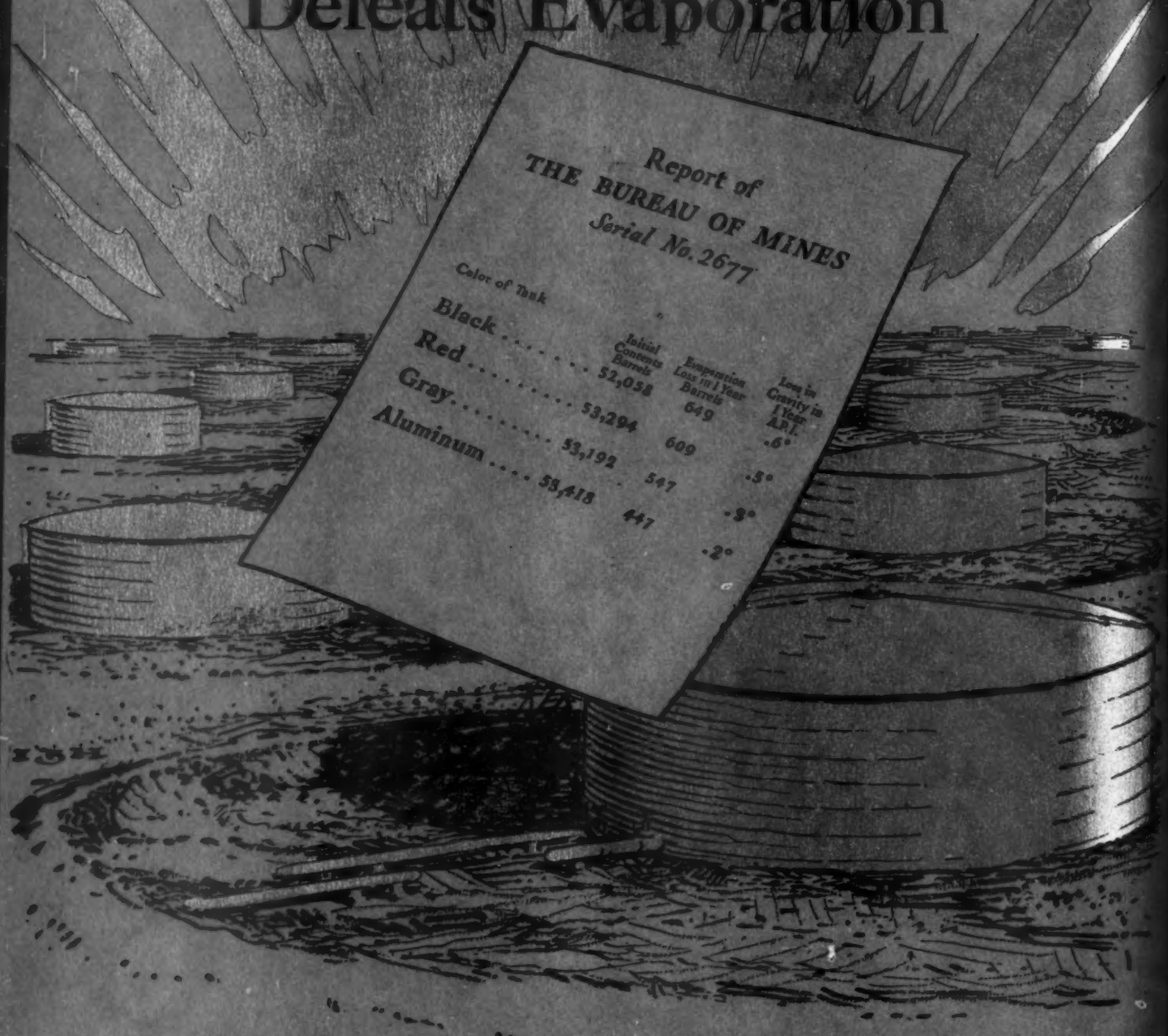
Report of
THE BUREAU OF MINES
Serial No. 2677
Color of Tank
Initial Contents Barrels
Evaporation Loss in 1 Year Barrels
Loss in Gravity in 1 Year A.P.I.
Black ..... 52,058 649 .6°
Red ..... 53,294 609 .5°
Gray ..... 53,192 547 .3°
Aluminum .... 53,418 447 .2°

NOTE the saving in evaporation that Aluminum Paint effected in a test by the Bureau of Mines. *100 barrels per year per tank* is the saving over its nearest competitor among the colors selected by the Bureau as practicable for the purpose.

And Aluminum Paint keeps its color—does not get dingy and lose its reflective quality.

Aluminum Paint—a coating of pure metallic aluminum—reflects the sun's rays and keeps the oil cool. It also is protection against rust and fumes—even being resistant to the action of hydrogen sulphide. Its long wearing quality—the saving in evaporation—the protection it affords to tanks, pipes and buildings—make it a real money-saver, and it costs no more than ordinary paints.

Write today for "Aluminum Paint" booklet.

ALBRON ALUMINUM
Trade Mark

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ALUMINUM IN EVERY COMMERCIAL FORM

ALBRON ALUMINUM
Trade Mark

sur, 350 ft w of No. 2. Hamilton & Martin, Hamilton Bldg., Wichita Falls, Texas. P. Bindle 3, T. Scott sur, 340 ft e and 306 ft s of No. 1.

CHAMBERS COUNTY—Humble, Houston, Myers 5, Wm. Bloodgood sur, 175 ft w of No. 4.

COMANCHE COUNTY — Grass Roots Oil Co., Fort Worth, Munn 2, L. C. S. L. sur, 600 ft n of No. 1.

DUVAL COUNTY — R. Driscoll, Corpus Christi, Sweedon 8, S 23, 1410 ft from s and 563 ft from w line. E. H. Buckner, Houston, Benavides 2, M. Arispe sur, 626 ft from sw and 694 ft from nw line.

EASTLAND COUNTY — States Oil Corp., Eastland, Calvert 7, S 17, blk 4, H&TC sur, 450 ft from n and 1120 ft from w line. R. H. Murray, et al, Eastland, Castlebury 1, S 36, blk 4, H&TC sur, ne corner.

FORT BEND COUNTY—Texas Co., Houston, Wheat 3, M. Young sur, 250 ft se of No. 2.

FREESTONE COUNTY—Roxana, Houston, Thiele 1, S 5, T. C. Ry. sur, se central part of lease.

GRAY COUNTY—Operator's Oil Co., Tulsa, Okla., Jackson 1, S 88, blk B2, H&GN sur, 330 ft from s and w lines. Phillips Pet. Co., Bartlesville, Okla. Son 1, S 87, blk B2, H&GN sur, 330 ft from n and 289 ft from w line. Texas Co., Wichita Falls, Bowers 3, S 91, blk B2, H&GN sur, 330 ft from s and e lines.

GUADALUPE COUNTY—T. H. Poole, Cotulla, Kreuger 1, I. Baker sur, 450 ft from n and w lines.

HARRIS COUNTY—Dave Hunt, Crosby, Adoue 1, B. Barrow sur, center. S. M. Dunbar, Houston, Hirsch 1, J. Strange sur, 190 ft from n and 50 ft from w line. Woods & Bennett, Humble, Edgar Hrs. 9, James Strange sur, 20 ft from e and 40 ft from s line.

HASKELL COUNTY — S. S. Kouri et al, Wichita Falls, Reynolds 1, S 102, I. Ry. sur, 500 ft from n and e lines.

HOWARD COUNTY—John O'Neil, Wichita Falls, Flowers 1, S 42, blk 31, T&P sur, 1320 ft from n and e lines. Coyle-Concord Oil Co., San Antonio, Roberts 2, S 156, blk 29, W&NW sur, 820 ft from s and 1480 ft from e line.

HUTCHINSON COUNTY—Skelly Oil Co., Tulsa, Okla., Armstrong 2, E. J. Bellows sur, 892 ft from s and 2741 ft from e line.

HARRISON COUNTY — Tylong O. & G. Co., Shreveport, La., Vaughn 2, W. R. Anderson sur, 211 ft from n and 494 ft from e line.

JACK COUNTY—Christie & Graham, Wichita Falls, Richards 1, BBB&C sur, 150 ft from n and 450 ft from w line. Seaboard O. & G. Co., Wichita Falls, Cullers 2, S 4, 800 ft from n and 200 ft from e line. Shaw & Rathke, Wichita Falls, Cullers 5, S 4, S. P. Ry. sur, 587 ft from e and 134 ft from s line. P. K. French, Fort Worth, Davis 1, U. J. Shackleford sur, n central. Consolidated Oil Co., Wichita Falls, Fields 1, J. Balch sur, 1600 ft from n and e lines. Holman Bros. & Leidecker, Graham, Holman 4, P. H. Rice sur, S 4, blk 2, 150 ft s and 428 ft e of No. 3.

JASPER COUNTY — Wells Oil Co., Beaumont, Norma Mills Co. 1, BBB&C sur, 300 ft from n and 2400 ft from e line.

JIM HOGG COUNTY — Alworth, Stevens, Hild & Co., Laredo, Garza 10, S 39, blk 7, ne corner.

JEFFERSON COUNTY — Yount-Lee Oil Co., Beaumont, Fee 27, blk 5, J. Douthitt sur, 19 ft from w and 118 ft from s line; Gladys 48, J. A. Veatch sur, 87 ft from e and 125 ft from s line; McFaddin 48, blk 1, R. Humphreys sur, 789 ft from e and 945 ft from n line. Battleship Oil Co., Beaumont, Parker 3, blk 4, J. A. Veatch sur, 150 ft nw of No. 2.

MONTAGUE COUNTY—Archer Drlg. Co., Wichita Falls, Rachels 1, G. Nichols sur, 150 ft from n and 461 ft from w line.

MILAM COUNTY — Moody Corp., Fort Worth, Corder 1, S 77, blk 2, CCSD&RGNG sur, (Pecos County), W. A. Jones, Minerva, Smith 3, T. J. Chambers sur, 60 ft sw of No. 1. W. S. Guthrie, Rockdale, Sheppard 1, E. Allen sur, 300 ft from n and 600 ft from e line.

MENARD COUNTY — Gibson Oil Corp., Amarillo, Russell 1, S 69, blk 3, CCSD&RGNG sur, 1320 ft from n and e lines.

MEDINA COUNTY—Chacon Oil Co., San Antonio, Jungman 2, S 31, J. Degant sur, 1500 ft from e and 500 ft from s line.

McLENNAN COUNTY — H. M. Amsler, Corpus Christi, Bird 1, T. Vega sur, 160 ft from e and 150 ft from s line.

MONTGOMERY COUNTY—J. W. Hardy, Conroe, Stewart 1, C. B. Stewart sur, sw corner.

MITCHELL COUNTY — California Co., Colorado, Foster 4, S 6, blk 9, T&P Ry sur, 1650 ft from s and 990 ft from w line.

NAVARRO COUNTY — Thelma Young et al, Corsicana, Chewing 7, J. People sur, s central. Wm. Clarkson, Jr., Corsicana, Bradley 8, R. C. S. L. sur, 300 ft w of No. 5.

NUECES COUNTY — Saxet Co., Corpus Christi, Meaney 3, 200 ft from n and 750 ft from w line. Perry, Reed & LaPrelle, Austin, Cochran 1, 300 ft from e and 350 ft from s line.

PECOS COUNTY—Gulf, Fort Worth, Smith 3, S 28, blk 194, GC&SF sur, 1504 ft from n and 937 ft from e line; 4, 887 ft from n and 937 ft from e line; 5, 330 ft from n and w lines. California Co., Colorado, Smith 6, S 35, blk 194, GC&SF sur, 330 ft from s and w lines. Marland Oil Co., Fort Worth, Yates A10, S 60, blk 1, T&GN sur, 1493 ft from n and 330 ft from w line; A9, 614 ft from n and 330 ft from w line. Kirby Pet. Co. & Edson Pet. Co., San Angelo, Harral 1, S 35, blk C4, GC&SF sur, 330 ft from n and w lines. California Co., Rankin, Smith 7, S 35, blk 194, GC&SF sur, 330 ft from e and 2028 ft from s line; 8, 1853 ft e of No. 5. Kershaw & Livingston, San Angelo, Canon 1, S 54, blk A2, T. C. Ry. sur, 330 ft from n and w lines. Simms Oil Co., Dallas, Smith 4, S 103, blk 194, GC&SF sur, 1342 ft e of No. 2. Moody Corp., Fort Worth, Corder 1, S 77, blk 2, CCS&RGNG sur, center. Humble, Wichita Falls, Smith 5A, S 36, blk 194, GC&SF sur, 330 ft from w and 275 ft from n line. W. E. Everett, Fort Worth, Field 1, S 3, blk 206, center.

POTTER COUNTY—Priarie O. & G. Co., Ranger, Bivins 2, S 39, blk M20, G&M sur, 660 ft from s and e lines. R. J. W. Oil Co., Amarillo, Cockrell 1, S3, blk B3, D&SE sur, 240 ft from n and 860 ft from w line; 2, 240 ft from n and 330 ft from w line.

PALO PINTO COUNTY—G. A. Clements, Ranger, Broomfield 1, T. Grubbs sur, ne corner.

SHACKLEFORD COUNTY—Sterling O. & G. Co., Abilene, McLemore 6, M. A. Wood sur, 690 ft from e and 450 ft from s line. Kone Prod. Co., Cisco, Selkade 1, 570, TE&L sur, 150 ft from ne and 150 ft from sw line. T. G. Shaw, Fort Worth, Edgar 19, S 20, Bayland Asy. sur, 300 ft n of No. 6; 20, 300 ft n of 15. Sterling O. & G. Co., Abilene, McLemore 7, M. A. Wood sur, 150 ft from s and 885 ft from w line. Big State Oil Corp., Dallas, Russ-Webb 3, S 22, blk 11, T&P sur, 300 ft n of No. 1. Bridwell & Heydrick Oil Co., Wichita Falls, McKelvey 1, S 9, blk 11, T&P sur, 150 ft from n and 500 ft from e line. Engel & Kiser, Albany, Mathews 1, S 33, E. T. Ry. sur, 175 ft from e and 150 ft from s line. Continental Oil Co., Wichita Falls, Jones 21, blk 72, L. A. L. sur, 300 ft e of No. 10. Southern Pet. Explo. Co., Abilene, Dyer 5, S 63, blk 11, T&P sur, 450 ft from w and 235 ft from s line. South & Shattuck, Dallas, Wofford 1, H. Holt sur, 150 ft from sw and 600 ft from se line. Roeser & Pendleton, Inc., Fort Worth, Alexander 1, 577, TE&L sur, 150 ft from nw and 750 ft from ne line.

STEPHENS COUNTY — F. C. Clark, Breckenridge, Riddle 3, S 67, blk 4, T&P Ry. sur, 400 ft n of 2. W. D. Conway et al, Ranger, Gardenhire 1, S 47, blk 6, T&P sur, 900 ft from w and 600 ft from s line.

SAN PATRICIO COUNTY — Saxet Co., Corpus Christi, Dunn 8, Dunn-Rachal sur, 1500 ft from n and 811 ft from e line; 10, 4040 ft from n and 813 ft from e line; White Point Co. 2, 1789 ft from w and 600 ft from n line; 3, 600 ft from n and w lines.

UPTON COUNTY — Orient Oil Operating Co., Wichita, Kansas, KCM&O Ry. 2, S 3, GC&SF sur, 880 ft ne of No. 1.

WICHITA COUNTY — Ascot Co., Wichita Falls, Roller 45, W. A. Grady sur, 150 ft from n and 450 ft from e line. Pet. Prod. Co., Wichita Falls, Love B 5, blk 11, W. S. Kennard sur, 300 ft s of No. 3. G. E. Ridgeway, Wichita Falls, Denny 4, blk 27, Cowherd sur, 300 ft nw of No. 2. Shappell Oil Co., Wichita Falls, Kemp & Kempner 10, blk 19, W. V. F. L. sur, 150 ft from n and e lines. Texas Co., Wichita Falls, Waggoner 337, H&TC sur, se corner. J. C. Jennings et al, Wichita Falls, Jennings 1, S 12, HT&B sur, 150 ft from s and e lines. Kimbell-Bostie, Burkburnett, Erickson 4, SA&MG sur, center. Vergate Oil Co., Tulsa, Watkins 1, blk 46, W. V. F. L. sur, 158 ft e of center of w line.

WINKLER COUNTY — Magnolia, Dallas, Hendricks 4, S 29, blk B5, 660 ft s of 1; 5, 660 ft s of 4. Atlantic Oil Prod. Co., Dallas, Hendricks D2, S 29, blk B5, School sur, 330 ft from n and e lines. Dixie & Southern Crude Oil Purchasing Co., Shreveport, La., Hendricks 1, S 30, blk B5, School sur, 330 ft from n and e lines; Hutchins 1, S 47, blk 26, 330 ft from n and e lines.

WILBARGER COUNTY — Darsey & Tidwell, Wichita Falls, Jones 1, S 47, blk 16, H&TC sur, 150 ft from s and w lines. Petroleu Prod. Co., Wichita Falls, Waggoner C 1, S 21, blk 3, H&TC sur, 150 ft from s and w lines. Texas Co., Wichita Falls, Waggoner B2, S 17, blk 4, H&TC sur, 205 ft from n and w lines; Waggoner D1, S 43, MEP&P sur, 1320 ft from n and 2640 ft from w line; Waggoner E1, S 24, blk 4, H&TC sur, 205 ft from n and w lines.

WHARTON COUNTY — Weed-Gayle Oil Co., Beaumont, Bay 7, S. F. Austin sur, 60 ft from nw and 485 ft from ne line. Geo. E. Colvin, Houston, Gulf 1, S. F. Austin sur, 70 ft from w and 30 ft from n line. Southern Explo. Co., Houston, Mullins 1, S. F. Austin sur, 50 ft from n and e lines.

WHEELER COUNTY — A. A. Kaufhold, Shamrock, Wallace 1, S 47, blk 23, H&GN sur, 330 ft from n and e lines. Texas Co., Wichita Falls, Morgan 2, S 93, blk 17, H&GN sur, 330 ft from n and w lines.

WEBB COUNTY — Colon Schott, Laredo, Bruni 1, S 835, blk 3, Albercas sur, 700 ft from e and 160 ft from s line.

YOUNG COUNTY — Robert Oil Corp., Breckenridge, Keen 3, 3401, TE&L sur, 300 ft e of No. 2; Stewart 1, D. Dawson sur, 2970 ft from w and 1240 ft from n line. Conner, Son & Claughley, Wichita Falls, McCluskey 11, 3415, TE&L sur, 80 ft from w and 200 ft from s line.

ZAPATA COUNTY—O. W. Killam, Laredo, Benavides 1, S 12, blk 13, H&GN sur, 500 ft from n and 150 ft from e line; Lopez 1, S 75, blk 16, SK&K sur, 200 ft from s and 700 ft from e line.

CALIFORNIA

HUNTINGTON BEACH—Allen Brown No. 4, 10-6-11. John Morris No. 1, 10-6-11. E. A. Fannell Co., Inc., No. 2A, 10-6-11. Dunn-Christensen No. 1, 10-6-11.

KERN COUNTY—Milham Explo. Co. No. 2, 8-28-23. Elbe Oil Land Dev. Co. No. 1, 20-28-29. Brown-Hammond Oil & Tool Co. No. 1, 14-11-9.

KERN FRONT—Bishop Corp., No. 4, 23-28-27. California Pet. Corp., Cole 1, 26-28-27; Lehmann 2, 23-28-27. Kern River Oil Fields of California, Ltd., No. 3, 26-28-27.

LONG BEACH—George F. Getty, Inc., L. B. 17, 30-4-12. Shell Co., Alamitos 30, 29-4-12; Martin Comm. 4, 29-4-12; Alamitos 29, 29-4-12; Alamitos 31, 29-4-12. Richfield Oil Co., Green 6, 29-4-12. California Pet. Corp., Brown 3, 29-4-12; McDavid 3, 29-4-12; Lewis 2, 19-4-12; Harlow 9, 19-4-12; Reedy-Dubois 2, 30-4-12; Martin Comm. 4, 29-4-12.

MIDWAY—Standard, No. 51, 29-31-24.

PIRU—Continental Oil Co., No. 4, 36-4-18.

RICHFIELD — Standard Oil Co., Vejar 3, 34-3-9.

RINCON—Petroleum Explo. Co. No. 1, 17-3-24. Pan-American Pet. Co., Hobson Fee 1, 17-3-24; Hobson Fee 2, 17-3-24; Hobson Fee 3, 17-3-24; Hobson Fee 4, 17-3-24. General Pet. Corp., Hobson 1-A, 8-3-24.

SANTA BARBARA — The Twin States Oil Co., No. 1, . .-4-27.

SOUTH MOUNTAIN—Oak Ridge Oil Co., Harvey 22, 13-3-21.

TEMBLOR—R. B. Jackson & C. H. Chamberlan No. 1, 36-29-20.

VENTURA—Petroleum Securities Co., Orton 6, 28-3-23.

WILDCATS FROM ALL SECTIONS

EAST TEXAS

Completion

Company, Well and Location	Initial Production Bbls.	Depth
HARRISON COUNTY—		
Magnolia, Trosper 4, J. H. Harrison sur	*	....

ANDERSON COUNTY — Brooks et al's Henby 1, Joseph Mertz sur, dk. Humble's Jones 1, Dan Roberts sur, surface csg parted, fish, td 3517 ft; Spencer Clemens 3, Sessions sur, dr 3476 ft. Pure's Cook 1, A. Lewellen sur, dr 1600 ft.

CAMP COUNTY—J. C. Rogers' Boyd 1, R. M. Montgomery sur, rig.

CHEROKEE COUNTY—Humble's Ragsdale 3, N. Johnson sur, dr 3799 ft. Panhandle Oil Co.'s Whalen 1, J. Jordan sur, sd 550 ft. Joe Walter et al's Barns & DeLoach 1, Perry Reese sur, set 12½-in at 62 ft.

HENDERSON COUNTY—W. K. Cayton et al's Hoffer & Nash 1, H. Jefferson sur, sd 2910 ft.

HARRISON COUNTY — J. R. Bahan's Hickman 3, E. Pollack sur, sd 2903 ft. Doney et al's Furrh 1, Joel Lipscomb sur, dr 300 ft. Ferguson et al's Abney 1, G. W. Martin sur, lcn. Magnolia's Anderson 1, J. Womack sur, wosr 2402 ft. Mitchell et al's Jones 1, J. Lipscomb sur, set 6-in at 946 ft. State Line O. & G. Co.'s Abney 5, E. Little sur, dr 2640 ft; Mullins 2, T. D. Wilson sur, dr 120 ft. Tylong O. & G. Co.'s Vaughan 2, W. R. Anderson sur, dk. A. L. Waller et al's Bryson 2, W. R Anderson sur, dr 1200 ft.

KAUFMAN COUNTY — Cranfield et al's Nicholson 1, A. Bennett sur, sd 3250 ft.

MARION COUNTY—William Gross' Baker 1, J. French sur, wosr 2391 ft. Lumberman's Oil Co.'s Bonham 1, R. Potter sur, dr 925 ft.

NACOGDOCHES COUNTY—P. R. Harris et al's Griffin 1, J. W. Anderson sur, sd 23 ft. Stein & Lewis' Birdwell 1, Jose A. Chirino sur, sd 1100 ft. Union Sulphur Co.'s Whitermark 1, Jose A. Chirinio sur, r 1999 ft.

PANOLA COUNTY — Bethany O. & G. Co.'s Burns 3, W. A. Birdsong sur, dk; Burns 4, W. A. Birdsong sur, dk; Richardson 3, J. Yarnell sur, dk; Magnolia's Jernigan 2, Jane Thorpe sur, rig; Fletcher 1, B. C. Jordan sur, coring 2025 ft; S. Davenport 2, Jessee Dunlop sur, sd 2390 ft; Steele 12, B. C. Jordan sur, dr 938 ft; Trosper 1, J. Shandoin sur, dr 2090 ft.

RUSK COUNTY—C. M. Joiner et al's Bradford 1, K. Ximines sur, fsh 1100 ft. Magnolia's Durren 1, Agulla Norris sur, dk. McCurrie et al's Sparks 1, Jessee Coarse sur, sd 2148 ft. The Texas Co.'s Schultz 1, A. Loffton sur, dr 3112 ft. Osborne et al's Matthews 1, D. Cortinas sur, sd 2330 ft.

SMITH COUNTY — Dr. Gaither et al's Parker 1, Don Thomas Quevedo sur, fsh 3251 ft.

SHELBY COUNTY—Magnolia's Pickering Lbr. Co. 1, Wm. J. Crane, sur, dr 3105 ft. Wm. Sebastian's Pickering Lbr. Co. 1, T. F. Polly sur, arr to set cas 2923 ft.

SABINE COUNTY—Crater Oil Co.'s Mills 2, Anthony Shoals sur, sdtrg bit and collar 3294 ft.

UPSHUR COUNTY — S. W. Richardson's Newsome 1, J. R. Davis, sur, sd 2025 ft; Minor 1, A Lowery sur, fsh 3500 ft.

LOUISIANA

Completions

Company, Well and Location	Initial Production Bbls.	Depth
CADDO PARISH—		
Magnolia, Bell 2, 4-17-16	*	....
RICHLAND PARISH—		
Helm et al, Tensas 1, 10-14-5e	*	22
SABINE PARISH—		
Longoria et al, Burkett 1, 9-9-13	*	....

BIENVILLE PARISH—E. J. Forrests' Perritt 1, 11-17-6, sd 2520 ft. Lake Bistineau Gas Co.'s State 1, 16-16-10, dr 1647 ft. Louisiana Pet. Co.'s Hays 1, 18-16-5, fsh 2326 ft.

BOSSIER PARISH — Ark. Nat. Gas Co.'s Barnett 1, 17-23-12, rig. Bahan & Davis' Dodson 1, 15-23-12, perforating cas 3077 ft. Belchic & Laskey's G. W. Roberson 1, 23-23-12, dk. R. L. Crook's Larkin 8, 14-19-11, wosr 396 ft. Doern et al's Bollinger 1, 9-22-11, dr 2980 ft. H. S. Goodwin Tr.'s Curtis 1, 2-16-13, set 6-in at 2497 ft. Hamiter et al's Hamiter 1, 10-23-13, rig. Humble's B. & W. 30, 15-19-11, sd 4531 ft. Magnolia' Roberson 1, 26-23-12, dr 1903 ft. J. C. McCullough Tr.'s Hodges 4, 25-16-12, set 6-in at 1568 ft. O'Brien Bros.' Dodson 1, 22-23-12, set 6-in at 3084 ft; Farrington 1, 21-23-12, dk. R. O. Roy's Werner 1, 7-17-11, dk. Palmer Corp.'s Louis Burk 1, 26-17-12, dk. Sligo Synd. Smith 2, 24-17-12, set 4½-in at 1706 ft. Sales & Walker's Bollinger 3, 30-23-11, wosr 3091 ft. Walker et al's Antrim 1, 28-23-12, sd 2260 ft. Woodley & Collins L. & A. 3, 15-23-12, arr to set 6-in at 3078 ft.

CADDO PARISH—Ark. Fuel Oil Co.'s Lane 1, 13-21-15, dr 3950 ft; Lane 2, 13-21-15, sd 3865 ft. Belchic & Laskey's P. A. Sharp 3, 11-18-16, dr 350 ft. Bussa & McGoldrick's Bickham 7, 28-21-15, wosr 1603 ft. J. W. Burton Tr.'s Caldwell 8, 18-21-15, dk. W. D. Chew's Fee 7, 23-21-16, dk. Dixie Oil Co.'s C. M. L. 9, 23-21-15, arr to test 3909 ft; Clark 9, 14-21-15, dr 3060 ft; Robertson 89, 14-21-15, flowing 3997 ft; Robertshaw 91, 14-21-15, dk; Robertshaw 92, 13-21-15, dr 863 ft; Huckaby 4, 11-21-15, dr 2742 ft. Double-I Oil Co.'s Watkins 1, 27-21-15, dk. Falcon Drlg. Co.'s Schmidt 1, 27-20-15, wosr 2292 ft. Greenwood Prod. Co.'s Cooper & Ellebre 1, 15-18-14, set 12½-in at 139 ft. Haynes Bros. Spell 1, 15-21-15, r 3702 ft. Spell 2, 15-21-15, sd 3092 ft. Magnolia's Pet. Co.'s W. M. Bell 2, 6-17-16, dk; J. W. Furrh 1, 28-18-16, sd 1998 ft; J. Furrh 1, 32-18-16, dr 2074 ft; Dillon 18, 24-21-15, dk; Dillon 21, 23-21-15, lcn; Robertshaw 21, 23-21-15, dr 3790 ft; Robertshaw 22, 23-21-15, dr 2482 ft; Hampton A-9, 15-21-15, dr 3382 ft. Ohio Oil Co.'s Aaron B. Land Co. 1, 32-23-16, sd 1553 ft; Plum 1, 32-23-16, sd 1619 ft; Smith 25, 12-21-15, dr 5180 ft; Thompson 1, 32-23-16, dr 2663 ft. Palmer Corp.'s Sellington 1, 17-21-14, dr 2914 ft. Rogers & Jensen's Newton Smith 1, 22-20-15, lcn. Shreveport Oil Corp.'s Smith 1, 23-21-16, dk; State 2, 27-21-15, sd 2400 ft. Simplex Oil Co.'s Thomas et al's 3, 15-20-15, wosr 2355 ft; Thomas et al 4, 15-20-15, wosr 2208 ft; Hunsicker 1, 15-20-15, rig. Standard's Helpman 54, 16-21-16, r 2353 ft. State Line O. & G. Co.'s Amerada-Sharp 1, 22-18-16, arr to test 943 ft. Standish Oil Co.'s Jolly 1, 22-22-15, wosr 1055 ft. The Texas Co.'s C. M. L. 47, 23-21-15, sd 3657 ft; C. M. L. 50, 23-21-15, fsh 3941 ft; C. M. L. 51, 23-21-15, dr 3808 ft; Mabry 10, 15-21-15, dr 3767 ft; Herndon 7, 14-21-15, dk; Herndon 8, 14-21-15, rig; Herold 10, 14-21-15, dr 2688 ft; Raines 19, 15-21-15, arr to core 4025 ft; Noel B-14, 14-21-15, blowing with air 3050 ft. Tubbs et al's Hines 1, 16-14-16, dr 2005 ft. Woodley Pet. Co.'s Knight B-4, 2-15-12, dr 2310 ft. Woodley & Collins McVey A-1, 23-19-14, sd 2100 ft. Waterman Brick & Tile Co.'s Fee 1, 18-17-16, dk.

CALDWELL PARISH—Grayson Oil Co.'s Crockett 1, 6-12-4, sd 2692 ft.

CATAHOULA PARISH — S. D. Hunter's Tensas Delta 2, 21-9-7e, dr 2484 ft. Lochnager et al's Beazley 2, 26-9-6e, cmtd off bottom of hole 3318 ft. McMillan 1, 29-8-6e, sd 1632 ft. Standard's Tensas 1, 23-8-5e, dr 1414 ft.

CLAIBORNE PARISH — El Dorado Chief Oil Co.'s Jones 1, 8-20-6e, dk. Magnolia's Lee 1, 16-22-8, dr 4377 ft.

DE SOTO PARISH—American Controlled Oil Co.'s Lanier 1, 7-11-11, wosr 2735 ft; Lanier 2, 5-11-11, dr 1450 ft. J. H. Askew Richardson 2, 25-13-11, dk. Benson Oil Co.'s Wolf 1, 3-10-13, dr 1945 ft. Chal Daniels Frost Johnson 1, 1-11-16, sd 100 ft. Dixie Oil Co.'s Jenkins 1- 9-12-11, dr 5783 ft. Foster et al's Johnson 1, 7-10-12, set 10-in at 107 ft. Hazlett- Simmons Neely 2, 1-14-12, sd 600 ft. Magnolia's Logan 1, 17-10-12, cleaning out 3265 ft. R. O. Roy's Tracy 1, 3-13-13, dk. Reliance Drlg. Co.'s Jones 1, 8-11-14, sd 2815 ft. Wingfield et al's Haygood 1, 18-10-12, sd 2400 ft.

FRANKLIN PARISH — Barbour Oil Co.'s Baker 1, 3-15-7e, sd 2884 ft. T. R. Cowell's2364 ft; Rolen account 1, 5-12-1w, dr 2831 ft. Moore 3, 12-11-6e, coring 2000 ft. Louisiana Pet. Co.'s Tensas 1, 11-11-6e, dr 1100 ft.

GRANT PARISH—W. D. Ball et al's Calhoun 1, 4-7-4w, rig. Swope et al's Fee 3, 18-9-1e, sd 16-7 ft; Fee 5, 18-9-1e, dk.

LA SALLE PARISH—Elbert Co.'s Urania 10, 7-10-2e, dk. Pima Oil Co.'s Urania 10, 7-10-3e, set 6-in at 1530 ft. Wingfield et al's Gibson 2, 2-9-1e, sd 3073 ft. G. W. Zoder's Urania 6, 7-10-2e, wosr 1516 ft.

MADISON PARISH—W. S. Smith's Yerger 1, 1-16-4e, arr to deepen 1700 ft.

MOREHOUSE PARISH — Consolidated Pet. Co.'s Perry 1, 14-20-4e, rig. Keisker et al's Bonita Lbr. Co.'s 1, 10-23-9e, dk. Natural Gas Prod. Co.'s Tensas Delta 10, 27-22-4e, sd 2250 ft. The Texas Co.'s Silvey 1, 22-20-6e, fsh drill stem 3821 ft. United Carbon Co.'s Atkins 1, 26-20-5e, dk.

NATCHITOCHES PARISH — Lawson & Pharris' Dave Delrie 1, 18-5-5, set 10-in at 40 ft. Tate et al's Leopole 1, 4-10-10, lcn.

OUACHITA PARISH—Imperial O. & G. Co.'s Tubbs 3, 13-19-3e, rig. Jordan Drlg. Co.'s Miller 1, 18-18-5e, dr 2135 ft. Ouachita Nat. Gas Co.'s D'Arbonn e 2-A, 34-19-3e, set 6-in at 2167 ft; Smith 7, 38-20-4e, set 12-in at 297 ft. Peerless Co.'s Moore 3, 49-20-4e, lcn. Palmer Corp.'s West Virginia T Co. 3, 5-18-4e, dk. Southern Carbon Co.'s Fairbanks 8, 38-19-4e, dr 1635 ft. United Carbon Co.'s Nelson Fee 2, 6-19-5e, lcn. West Virginia O. & G. Co.'s Fee 5, 5-18-4e, dr 50 ft.

RAPIDES PARISH—Collins Bros.' Allen 1, 25-5-1w, dr 450 ft.

RICHLAND PARISH—Gulf's Wayne L. & T. Co. 2, 23-16-5e, sd 2453 ft; Millsap 1, 8-17-6e, r 926 ft; Rhymes 3, 28-17-16, lcn. Louisiana Pet. Co.'s Binion 1, 22-17-16, sd 2474 ft. Moody & Seagraves Osborne 1, 14-15-5e, dr 162 ft; McCoy 2, 30-16-6e, set 6-in at 2302 ft; Noble 1, 36-15-5e, set 8-in at 900 ft; McClanahan 1, 36-16-5e, set 6-in at 2296 ft; Hatch 1, 34-16-15, lcn; Hemler B-1, 20-16-6e, dr 2115 ft; Hemler B-2, 6-15-6e, set 8-in at 881 ft; Hemler C-1, 29-16-6e, lcn; La Floner 1, 18-16-6e, lcn. Nat. G. & F. Corp.'s Sortor A-1, 9-16-6e, dr 1630 ft; Sortor B-2, 19-16-6e, dr 2270 ft; Sortor B-3, 19-16-6e, lcn; Sortor B-4, 19-16-6e, lcn; Thompson A-1, 21-16-6e, lcn. Oliver et al's Hatch 1, 2-15-5e, sd 2316 ft. Roxana's Tensas 2, 1-14-5e, dr 2510 ft. Standard Drlg. Co.'s Delta H. L. Co. 1, 22-16-7e, dr 2786 ft. Southern Carbon Co.'s Sortor 1, 20-16-6e, dr 826 ft. Stovall Drlg. Co.'s Dunning 1, 26-16-6e, dr 500 ft.

SABINE PARISH — Ark. Fuel Oil Co.'s Logan A-1, 23-10-12, cleaning out 4258 ft; Logan 10, 32-10-12, sd 2980 ft; Logan 11, 3310-12, dr 3102 ft. S. P. Borden Tr.'s Logan 1, 36-10-13, dr 1250 ft. Clark Seip et al's Moore 1, 33-10-12, dk. Dixie Oil Co.'s Steinfield 1, 20-10-12, sd 80 ft. L. M. Emlet's Bowman Hicks 6, 8-7-12, sd 3710 ft; Bowman Hicks 7, 11-7-14, blg 3529 ft; Mansfield H. L. Co. 1, rig. Magnolia's Rembert 2, 32-10-12, set 6⅝-in at 3180 ft. Moffitt et al's Moore 3, 5-9-12, tested dry at 3268 ft, deepened 3332 ft.

UNION PARISH — Carter et al's Security Trust 1, 7-23-1e, sd 2257 ft. Camette et al's Tugwell 1, 21-22-1e, sd 2112 ft. Interstate Nat. Gas Co.'s Parks 1, 32-20-3e, dk; Stephenson 1, 6-21-4e, lcn; Steele 1, 36-20-3e, dr plug 2107 ft. Southern Carbon Co.'s Harris 1, 20-20-4e, dr 2154 ft.

WEBSTER PARISH — Arkansas Nat. Gas Co.'s Central-Texas 1, 36-25-10, rig. Humble O. & R. Co.'s Gray 1, 26-21-10, dr 3258 ft; Babb 5, 14-21-10, dr 1225 ft. S. A. Lane's Miles 1, 24-17-9, dr 1050 ft. Magnolia's Aarnes Cox 3, 22-21-10, dk; Haynesville Merc. Co. 1, 1-22-10, set 6⅝-in at 2577 ft; Marshall 5, 21-21-10, wosr 2526 ft; Mixon 1, 22-22-10, dk; Cole 1, 27-21-10, r 2725 ft; D. G. Cox 1, 22-21-10, changing rig 2715 ft; Newsome 1, 32-23-9, dr 1936 ft; Roseberry 1, 29-23-9, dk. Northwest La. Gas Co.'s Munn 1, 36-23-10, lcn. Ojio Oil Co.'s Holloway 4, 23-21-10, blg 4258 ft.

WINN PARISH—Ohio Oil Co., Rolen 1, 9-12-1w, sd 2149 ft; Edenborne 1, 31-10-4w, dr

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H. M. Roarks Southern Mineral Co. 3, 19-113w, sd 505 ft.

WEST CARROLL PARISH—Palmer Corp.'s White 1, 2-19-10e, set 8-in at 932 ft. Phillips Pet. Co.'s Darnell 1, 32-20-9e, dr 2920 ft.

ARKANSAS

Company, Well and Location	Completion Initial Production Bbls.	Depth
UNION COUNTY—		
Magna Prod. Co., Tatum 6, 7-16-15	*	2704

BRADLEY COUNTY—Johnson & Adams' Southern Lbr. Co. 1, 12-12-12, sd 2204 ft.

CALHOUN COUNTY — Genther et al's Stout 1, 3-14-16, dr 2815 ft.

COLUMBIA COUNTY — Mitchell et al's Franks 1, 25-19-22, sd 150 ft. The Texas Co.'s Alexander 1, 8-17-19, dr 2775 ft.

DREW COUNTY — McClintock's et al's Ogle 1, 35-13-5e, sd 2550 ft.

GRANT COUNTY—Jones et al's Meeks 1, 5-4-11, sd 1400 ft.

LAFAYETTE COUNTY — Ken-Saw Pet. Co.'s Kensaw 1, 31-19-24, sd 3100 ft.

LINCOLN COUNTY—Pine Prairie O. & G. Co.'s Carter 1, 33-10-6, sd 2176 ft.

LITTLE RIVER COUNTY — Gote et al's Allen 1, 2-13-31, sd 2941 ft.

MILLER COUNTY—Guess et al's Saunderson 1, 14-15-26, sd 896 ft. Lenze et al's Mann 1, 22-15-26, sd 2889 ft.

NEVADA COUNTY—Aines & Zingg's Womack 1, 10-14-21, wosr 1215 ft. Burnham et al's Kennedy 1, 9-14-21, wosr 1262 ft. Fruen et al's Rhodes 1, 22-12-21, sd 1515 ft. Humble O. & R. Co.'s Groves B-4, 1-14-21, wosr 1140 ft. McDonald et al's Pell 1, 9-15-22, dr 2022 ft. J. J. O'Brien's Haynie A-5, 6-14-20, wosr 1204 ft; Haynie B-1, 6-14-20, wosr 1218 ft; Haynie B-5, 1-14-21, plugged back to 1163 ft; Moss A-14, 1-14-21, wosr 1160 ft; Moss A-15, 1-14-21, wosr 1170 ft; Moss A-17, 1-14-21, rig. Wright Oil Co.'s Groves 3, 12-14-21, set 16-in at 1148 ft.

OUACHITA COUNTY—Buffalo Oil Co.'s Culp 1, 22-15-19, sd 2075 ft. Brewer et al's Curry 1, 32-15-19, wosr 2201 ft. Copenhagen et al's Berg 3, 13-15-17, sd 2193 ft. A. T. Grayson's Reynolds 1, 21-14-17, sd 1756 ft. H. M. Harrell's Ponder A-1, 18-12-17, killing water flow 1066 ft. Magnolia's Stout B-1, 28-14-16, dr 3112 ft. Marine Oil Co.'s Hayes 5-A, 4-16-15, lcn; Hayes 8, 4-16-15, coring 2635 ft. Phillips Pet. Co.'s Betty Joyce 19, 33-15-15, lost casing seat-coring 2696 ft. Standard's Umsted 5, 32-15-15, arr to deepen 2267 ft.

UNION COUNTY—Brown et al's Slaughter 1, 2-17-16, sd 2296 ft. Bondurant et al's Garner 1, 8-18-12, sd 2635 ft. Booth et al's Rowland 1, 8-17-11, dr 2715 ft. Garrett-Modisette Drlg. Co.'s Gregory 1, 10-17-14, testing 2765 ft. Gulf's Murphy 45, 4-16-15, dk. Grimes Bros.' Williams 2, 8-18-14, set 6⅝-in at 226 ft. Imperial O. & G. Co.'s Goodwin 1, 26-17-16, sd 3118 ft. E. M. Jones' Crain 1, 2-17-14, shut in 3062 ft. W. R. Keever's Ezell 4, 12-17-15, arr to deepen 2156 ft; Ezell 5, 12-17-15, lcn. Keene & Wolfe's Murphy 6, 9-16-15, dk. Lion O. & R. Co.'s Horn 1, 17-17-13, dr 1520 ft. Laurel O. & G. Co.'s Houston 1, 12-16-16, arr to deepen (depth not known) Lyell et al's Stegall 1, 11-17-15, sd 47 ft. Magnolia's Carroll 2, 1-17-14, sd 1500 ft; Crawford 3, 8-16-16, dk; Laney 3, 8-16-16, dk; Laney 4, 8-16-16, dk; Wilson 7, 17-16-15, coring 2368 ft; Murphy 8, 8-16-15, arr to plug back 2690 ft. Mountz et al's Pratt 6, 8-18-15, sd 2146 ft. C. E. Murdock's Murphy 2, 17-16-15, arr to deepen with cable tools 2754 ft. Murdock et al's Vestal 1, 17-16-15, sd 2561 ft. National Cons. Pet. Corp.'s Fagg 1, 8-16-16, wosr 2643 ft. Nat. G. & F. Corp.'s Hill B-3, 5-16-15, lcn. J. J. O'Brien's Saxon 1, 16-16-16, tested sw 2659 ft. Ohio Oil Co.'s Crain 3, 1-17-14, setting 6⅝-in at 2980 ft; Crain 4, 1-17-14, lcn; Crain 5, 1-17-14, dr 2700 ft; Crain 6, 1-17- 14, dk; Pumphrey 1, 1-17-14, arr to set 6⅝in at 2984 ft; R. Pumphrey 1, 2-17-14, dr 20 ft. Pitcher et al's Arkansas Timber Co. 1, 21-17-11, dr 1087 ft. Rice et al's Newton 1, 13-17-16, sd 3003 ft. Rovenger Oil Corp.'s Harrell 4, 15-17-16, dk; McCain 1, 4-17-14, coring 3055 ft. Sun's Hays 3, 3-16-15, sd 2275 ft. Standard's Murphy 24, 4-16-15, set 4½-in at 2597 ft; Murphy 33, 4-16-15, arr to abn 2585 ft. Wingfield et al's Greer 1, 15-19-13, sd 50 ft.

SOUTHERN CALIFORNIA

BOYLE HEIGHTS — Haskell M. Greene's P. A. S. F. 1, plug 2450 ft, td 2990 ft, will test.

CLAREMONT—Claremont O. & G. Co.'s 1, sd 1130 ft.

DAVIDSON—California Well Drilling Co.'s Del Amo 1, dr 7066 ft.

DOMINGUEZ — Dominguez Extension Oil Co.'s Ramsey 1, sd 5510 ft.

EL SEGUNDO—Rider Oil Synd.'s El Segundo 1, sd 2300 ft. Southern Calif. Drilling Co.'s Matteson 1, sd 4865 ft.

FAIRVIEW — Petroleum Securities Co.'s Fairview 1, dr 3900 ft.

GARDENA—Circle O. & G. Co.'s Pomeroy 1, sd 4130 ft.

HAWTHORNE—R. R. Horowitz's 1, 1500 ft; West O'Donnell 1, lcn. San Clemente Oil Co.'s Peck 1, test showed water at 5535 ft.

HUNTINGTON BEACH—Calnan Pet. Co.'s S. & W. 1, sd 5107 ft. J. A. Brower's Bolsa 1, dr 5107 ft. Duell Pet. Corp.'s 1, rigging rotary. Leo Stein's 1, dr sandy shale 5061 ft.

INGLEWOOD—Alenson & Co.'s 1, sd 3500 ft. Hurst Oil Corp.'s Simons 1, sd 3740 ft.

LANCASTER — Otis Andrews' 1, rigging electric outfit.

MAYWOOD—Magnolia Pet. Synd.'s 1, sd 4450 ft.

MONTEREY PARK — Monterey Park Pet. Co.'s 1, dr 3100 ft.

MONTEBELLO — Rotary Air Drill Co.'s Germain 1, sd 1400 ft.

NEWHALL—W. W. Stabler's Castaic 1, sd 3406 ft. Thomason & McCoy's S. F. Canyon 1, sd 1610 ft.

OLIVE — Standard's 1, dr hard gray sand, 5018 ft.

ORANGE—Chas. A. Son's 1, dr brown shale 3610 ft.

PICO—Associated's Patterson 1, dr 3061 ft.

POTRERO—Associated's Cypress 1, dr 5410 ft, some oil sand.

PUENTE HILLS—Anchor Pet. Co.'s Hudson 1, sd 2270 ft.

SAN FERNANDO—Shell's Mission 1, coring hard sand 4666 ft.

SAN JOSE HILLS—Bardeen Oil Co.'s Didier 1, sd 2255 ft. D. & B. Oil Co.'s Amar 1, plug 2470 ft, td 4380 ft, sd. Fuller & Gray's Sanchez 1, rig.

SAN JUAN CAPISTRANO—O. K. Carr's Forster 2, sd 4200 ft.

TELEGRAPH CANYON—Quadra Pet. Co.'s M. J. M. 1, sd 4210 ft.

YORBA—Pet. Securities Co.'s Kraemer 1, sdtr dr pipe 2980 ft. Standard's Y. L. W. 1, dr hard brown shale 4710 ft.

WATTS—Southwest Pet. Corp.'s Ramsaur 1, dr 4288 ft.

WATSON—White-Behr Cons. Oil Co.'s Watson 1, dr 2,655 ft.

WEST COYOTE—Shell's Calif. Stern 1, dr 1911 ft.

RIVERSIDE COUNTY—Hemet Pet. Corp.'s Ward 1, dr out cmt 1624 ft, td 1640 ft. Spindletop Oil Synd.'s 1, setting string 6¼-in cas 3175 ft for test. Trabuco Oil Co.'s 1, dr 2740 ft.

SAN BERNARDINO COUNTY — Colton Terrace Oil Co.'s 1, dr 1500 ft. Como Oil Co.'s Cajon 1, sd 2845 ft. Del Rosa Oil Co.'s 1A, sd 915 ft. Hesperia Oil Co.'s 1A, plug 2450 ft, td 3312 ft, sd. H. & P. Oil Co.'s Ranger 1, co 2140 ft. Western Pacific Oil Co.'s 3, sd 3005 ft.

SAN DIEGO COUNTY—Oceanside Oil Co.'s Randall 1, sd 2450 ft. Davenport O. & G. Dev. Co.'s 1, dr 265 ft. S. S. Turner's Baler 1, dr 413 ft.

NORTHERN CALIFORNIA

FRESNO COUNTY

NORTH COALINGA — Superior Oil Co.'s 1, 18-21-17, rig.

RAISIN CITY—Fresno-United Oil Co.'s 1, 23-15-18, sd 3960 ft.

KERN COUNTY

BAKERSFIELD—Pacific-Eastern Prod. Co.'s KCL 1, dr sand and shale 4350 ft. James O'Donnell's 1, ne ¼ 7-30-28, lcn.

BELRIDGE—Zurich Oil Co.'s 1, 18-28-22, dr 2100 ft.

BUTTONWILLOW—McAdams et al's 1, 26-29,23, dr 1625 ft. Milham Explo. Co.'s Kern 2, 8-28-23, new lcn.

COMANCHE POINT—Kern 29 Oil Co.'s 1, 29-31-30, sd 2415 ft.

DELANO—North American Consoildated Oil Co.'s 1, 5-25-25, fsh for bit 3670 ft.

DEVIL'S DEN—W. T. Garrett's 1, 30-25-19, rig. Marathon Oil Co.'s 1, 13-25-18, sd 4390 ft. Midway Northern Oil Co.'s 1, 25-25-18, oil showings 2425 ft. R. H. Sayers' 1, 25-26-18, sd 1475 ft.

EDISON—General Pet. Corp.'s Kerwin 1, 5-30-29, dr out cmt for prod test, td 4005 ft. George F. Getty's Beazely 1, sd 3718 ft. Kerwin & Sealey's 1, 4-30-29, rig. Midway Northern Oil Co.'s Brown 1, building rig.

FRUITVALE—Pacific-Eastern Prod. Co.'s 1, 21-29-27, dr shale 3208 ft.

GREENFIELD—Mays & Valencia's Machada 1, 31-30-28, rig.

GOULD HILLS—Bomke & Balls 1, 12-29-20, dr shale 1350 ft. California-Kentucky Oil Co.'s 1, 8-29-21, sd 1620 ft. Harrison & Co.'s 3, 36-29-20, dr oil sand 400 ft. Cymric Oil Co.'s 1, 36-28-20, rigging rotary. Moore & Delano's 1, 11-29-20, rigging cable outfit.

McFARLAND—Superior Oil Co.'s Smith 1, 11-26-27, oil showings 2305 ft.

McKITTRICK—Abbott Pet. Co.'s 1, 2-30-21, sd 1940 ft. Lacy-Easper Petroleum Co.'s 1, 18-19-22, sd 3267 ft. McKittrick Hills Oil Co.'s 1, 18-30-22, co 3250 ft. Ozana Oil Co.'s 1, 27-29-21, sd 1770 ft. Ridge Oil Co.'s 1, 13-30-21, sd 4045 ft.

MON BLUFF—Miocene Oil Co.'s 1, 34-27-28, rig. Shell's Glide 1, dr hard sand 3225 ft. Union's Tribe 1, 28-27-28, dr 1350 ft.

NORTH MIDWAY—Gore Oil Corp.'s 1, 34-30-22, sd 1350 ft. Electric Pet. Co.'s 1, 34-30-22, dr brown shale 1675 ft.

NORTH POSO CREEK — General Pet.'s Glide 1, 21-27-28, oil showings 1600 ft.

SHALE HILLS—Huntington & Hawthorne's 1, 35-26-18, sd 600 ft. Nelson & Mountford's 1, 18-27-19, 8¼-in cas cmt 2658 ft, td 2690 ft. Oildale Oil Co.'s 1, 13-27-18, sd 560 ft.

SUNSET — Fresno-Sunmaid Oil Co.'s 1, 16-11-24, sd 4200 ft. Raleigh Oil Co.'s 1, 8-11-23, 8¼-in cas cmt 2600 ft, td 2608 ft.

TEMBLOR—Fortuna Oil Co.'s 1, 28-32-13, sd 2660 ft. Salegna Inv. Co.'s 1, 36-29-20, sd 300 ft.

TEHACHAPI—C. R. Asmussen's 1, 23-11-11, sd 1510 ft. Crusaders Oil Co.'s 1, 21-10-10, prod test 2365 ft. J. B. Harding's 1, 5-10-10, sd 1050 ft.

SANTA BARBARA COUNTY

GOLETA—Barnsdall's Edwards 1, plug 2283 ft, trying to locate water. Graham-Loftus Oil Co.'s Orella 1, sd 1600 ft. J. J. Rekar's La Patera 1, sd 1805 ft.

BUELTON—F. & W. Buttram's Odin 1, dr 1215 ft.

ORCUTT—G. O. Graham's 1, 33-10-34, lcn.

SANTA YNEZ—San Marcos Oil Synd.'s 1, 34-7-29, dr 3350 ft.

SANTA BARBARA — Henry R. Dabney's Wright 1, sd 135 ft. Twin State Oil Co.'s Modoc 1, rigging up. Channell Oil & Dev. Co.'s 1, 22-4-26, dr 5950 ft. Hollywood Oil Corp.'s Sudden 1, 35-5-35, sd 1300 ft.

SUMMERLAND — Summerland Oil Co.'s Becker 1, trying to locate water 3030 ft.

VENTURA COUNTY

CAMARILLO—Standard's Camarillo 1, dr 5700 ft, hard sand.

FILLMORE—Superior Oil Co.'s Rancho 1, bldg rig. Sespe Oil Co.'s Smith 2, sd 4005 ft.

MOORPARK—Shell's Berylwood 1, sd 6066 ft. E. A. Parkford's Dabney-Lloyd 1, sd 4005 ft.

RINCON — Bankline Oil Co.'s Needham 1, lcn. Chanslor-Canfield Midway Oil Co.'s Hobson 1A, plug 6730 ft, bailing for test; Hobson 1B, perforating 5¾-in pipe below 4900 ft for test, td 5740 ft; Hobson C1, dr 150 ft; Hobson C2, rigging rotary. General Pet. Corp.'s Tompson 1, rigging rotary; Hobson 1A, dr 150 ft; Ferguson 1, lcn. Miley Oil Co.'s H. & H. 1, sp; H. & H. 2, rigging rotary. Montecito Oil Producers Assn.'s Cota 1, dr 3516 ft. Pan-American Pet. Co.'s State 1, trying to locate water, td 3220 ft; Hobson State 2, rig; Hobson Fee, dr 2266 ft; Hobson Fee 2, dr 1510 ft; Hobson Fee 3, dr 1775 ft. Hobson Fee 4, dr 300 ft. Scott Petroleum Properties' 1, co 315 ft.

RED MOUNTAIN — Miley Explo. Co.'s Casitas 2A, dr 775 ft.

SANTA PAULA—W. W. Bryant's Anlauf 1,

Be Careful In The Selection Of Lubricants For Your Motorized Equipment

Passenger cars and trucks of different makes vary considerably in type and design.

Be sure that you understand: (1). The type of lubricating system used, which determines the method of feeding the oil. (2). The type of cooling system used, this factor having more or less effect on the operating temperatures of various parts of the motor.

The proper lubrication of motor equipment means not only the lubrication of the engine cylinders — but the complete lubrication of all of the moving parts of the motor. Much harm can result from the use of too heavy an oil in a pressure system not designed to handle it—also where the "splash" system is used, the oil must not only flow easily, but must atomize readily so as to reach certain bearings which can be lubricated only by a fine mist. Your passenger cars and your trucks are designed to give you many years of service—if they are properly lubricated.

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dr 1130 ft, oil showings. Meriam Pet. Co.'s Anlauf 1, sd 1330 ft.

STRATHERN—Shell's Strathern 1, dr 475 ft.

SOUTH MOUNTAIN — Ring Pet. Corp.'s Converse 1, sd 3950 ft.

SATICOY—Standard's Saticoy 1, 9-3-22, rigging rotary.

SULPHUR MOUNTAIN — Geiss & Bradford's 1, 21-4-22, pumping 130 bbls, td 1997 ft.

MISCELLANEOUS

KINGS COUNTY—Associated's Smith 1, 12-23-18, sd 2043 ft. Bolsa Chica Oil Co.'s 1, 30-23-19, sd 3500 ft. General Pet. Co.'s 2, 22-26-18, 9-in cas cmt 5282 ft, td 5283 ft. Monocline Dev. Co.'s 1, 7-21-21, soft sand 4030 ft. Hugh McPhail's 1, 13-24-18, sd 2090 ft. Milham Explo. Co.'s Kettleman 1, gas showings 5688 ft. South Coalinga Oil Co.'s 1, 35-24-19, sd 2920 f.

MADERA COUNTY—Fort Wayne Synd.'s 1, 22-10-17, oil showings 2250 ft.

NAPA COUNTY—Ghesling & Wreden's 1, 6-8-3, sd 1110 ft. Griffiths Oil Co.'s 6, 7-8-3, fsh for bit 2417 ft. Napetro Prod. Co.'s 1, 21-8-3, dr 607 ft; 2, 21-8-3, may abn, td 600 ft.

SAN LUIS OBISPO COUNTY—Miley Explo. Co.'s 1, 15-29-17, dr 576 ft. Richfield Oil Co.'s 10-29-17, dr 2111 ft. Waklin Pet. Co.'s 1, 27-27-11, redr 2455 ft. Union's 1, 3432-15, bldg rig.

SAN MATEO COUNTY—Shell's Cowell 1, 8-6-5, 5055 ft.

SONOMA COUNTY — Shell's Murphy 2, swabbing 1955 ft; Mossi 1, lcn.

TULARE COUNTY—Birch Oil Co.'s 1, 13-21-26, dr 2526 ft. Ducor Drilling Co.'s 1, 29-23-27, sd 4160 ft. Federal Explo. Co.'s 1, 15-22-24, sd 5462 ft. Josephine E. Neame's 1, 24-17-24, sd 2025 ft.

MOUNTAIN STATES

NEW MEXICO

Curry—Hasson Pet. Co., Laird 1, 22-8-36, spd and sd. Clovis O. & G. Co., Hoskinson 1, 21-3n-36, sd 3736 ft.

CHAVES—Gibson Oil Corp., Forsyth 1, 8-11,23, sd at 675 ft. Buffalo-Roswell 1, 24-11-27, sd at 4300 ft. Arena Oil Co., 1, 18-13s-31e, fsh tools at 750 ft. McQuigg Bros., Neis 1, 7-5s-29e, dr 745 ft.

GUADALUPE—Hanchett Oil Co., Rutherford 1, 23-8-24, dr below 4300 ft. Union Pet. Co., McMullen 1, 24-5n-16, installing heavy equipment, td 235 ft. Navajo Oil Co., Goard 1, 10-31-7, dr.

LEA—Midwest Ref. Co., Hobbs 1, dr 475 ft.

McKINLEY—Smart & Reid 7-17-9, rig. Inland Oil Corp., 22-18-10, ur at 762 ft. S. Dysart 1, 21-14-9, imdrr at 1495 ft. Continental Oil Co., Carrica 1, sw 9-17n-7w, dr 2700 ft. Jenkins Oil Co., 1, 1-16n-9w, dr 1199 ft. Williams et al 2, 30-18n-8w, standing with hole full of water at 860 ft. Reliance Oil Co., Valentine 1, 16-17-9, standing 920 ft. Producers & Refiners Corp., 1, 12-17-9, dr 1199 ft.

QUAY—Gibson Oil Corp., 1, 25-8-32, operations suspended at 3500 ft. Ohio Oil Co., Jordan Ridge 1, 24-7-29, dr 4492 ft.

SAN JUAN — Continental Oil Co., Munox 17-2-29-19, redr at 3785 ft. Portage O. & G. Co., 3, 25-31-13, abn at 1300 ft. Kansas-Colorado Oil Co., Atterberry 1, 24-31-11, fsh tools at 1850 ft. T. C. N. Oil Co., Lanier 1, 9-29-11, sd 547 ft. Huntington Park Oil Co., 2, 29-30-9, set cas at 4155 ft. R. M. Smith, Abrams 2, 23-29-11, standing at 532 ft. Huerfano Oil Co., Wilbank 1, 25-29-11, standing. Aztec Oil Co., Finch 1, 15-29-11, repairing equipment, td 650 ft. Senate Oil Co., Lanier 1, 34-29-11, dr 1925 ft. Union Oil & Mining Co., Pine 2, 8-29-9, oil showing, fsh, td 2950 ft.

SOCORRO—Abo Oil Co., 1A, 14-3s-6e, set 12½-in at 600 ft, sd to reorganize.

TORRANCE—Duran Dome Oil Co., 1, 31-2-14, dr 1533 ft. F. G. Wilson, Trustee, Pace 1, 12-6n-27, crooked hole at 2215 ft. Bluhall O. & G. Co., 20-6n-10e, dr 452 ft. San Juan Petroleum, Randall 2, 26-6n-10e, dr 4800 ft.

VALENCIA—Acme Oil Co., 26-6-3, dr 2110 ft. Stone et al, 25-7-2, fsh pipe at 1967 ft.

COLORADO

BOULDER—Left Hand Oil Co., Prechtl 1, 34-3n-70, swabbing. Essok Oil Co., Martin 1, 5-1s-70, ur to 5225 ft. Repollo Oil Co., Nichols 1, 32-1n-70w, dr 3000 ft.

EL PASO—Grand Union Oil Co., No. 2 John Jr., 19-17s-67w, dr 775 ft.

FREMONT — Fremont Leasing & Holding Co., 1, 2-19-70, fsh. Columbia Oil Co., Sheridan 1, 20-18-70, sd at 2240 ft.

LAS ANIMAS—Parker Club, Inc., Adams 1, 32-34-55, ur 3700 ft. Foley & Goldsworthy, Government 1, 11-30-60, standing at 2010 ft.

LA PLATA—Collins et al, Aspass 1, 10-34n-11w, dr 800 ft.

MOFFATT—Ohio Oil Co., Kukendall 1, 22-21n-11w, sd 2008 ft for winter. Reiter-Foster Oil Co., State 1, 16-12-100, prep to cmt at 2065 ft. Yarg Producing & Ref. Co., No. 205, 26-4n-92w, dr 1490 ft.

MONTEZUMA—Coon & Cotton, Hall 1, 9-35n-13w, dr 560 ft.

RIO BLANCO—Texas Prod. Co., Freeman 1, 27-3-94, dr 5155 ft. Argo Oil Co., sw 9-2s-96w, moving in material.

ROUTT—Great West. Oil Co., State 1, 17-60n-86w, waiting casing at 1710 ft.

SAGUACHE—Cook, Weber et al, State 1, 27-41n-10e, hole partly cleared, td 4300 ft.

MONTANA

CARBON—Ohio Oil Co., Northern Pacific 1, 11-75-21e, co at 2390 ft. Book et al, Moore 1, 13-17-23, wtg supplies, td 850 ft.

FERGUS—Melton Corp., Fenhold 1, 24-21-17, suspended at 220 ft, acct bad weather. Rowland, et al, 1, 13-17-23e, sd.

FLATHEAD—Flathead Pet. Co., Reservation 1, se 35-23-22w, rig.

GLACIER—Rimrock Oil Co., 29-35-5w, rig up.

HILL—A. H. McFarland, sw 15-30-13e, sd at 100 ft. Gad-Hamilton et al, Goldstone 1, sw 25-36-9e, rig. Equitable Oil Co., Perkins 1, 34-33-12e, ¶4 at 3330 ft.

LIBERTY—Chester Oils, Inc., Laird 1, 31-37n-6e, Sunburst O. & R. Co., Disotell 1, 10-37n-5e, ¶14 at 2400 ft.

MUSSELSHELL — Manhattan Oil Co., ne 24-7-24e, sd 60 ft. McElwain Oil Dev. Assn, 2-11-22e, rig.

RICHLAND—Community Drlg Co., Pioneer 1, rig to drill deeper from 2600 ft.

ROOSEVELT—Pioneer O. & G. Co., 1, se 35-27-51e, sd 1590 ft.

PONDERA—Embar Drlg. Co., 5-27-3w, dr 1890 ft. S. C. Ferdig et al, 8-27-4w, rig. Continental Dev. Co., sw 19-27-3w, dr below 600 ft.

PHILLIPS—Big Dome Oil Co., Bloomberg 1, ne 1-32-32e, set 12-in at 520 ft and dr ahead.

SWEETGRASS—Shoshone Consolidated, nw 23-2n-15w, cmt cas at 2100 ft.

TOOLS—Kevin-Flathead Oil Co., 1, ne 27-36n-23, sd 2200 ft. Zenith McDonald Lowey 1, 35-36n-1w, sd 2135 ft. Sunburst O. & G. Co., Grandview 1, 10-34n-3e, rig. Commonwealth Pet. Co., Benjamin 1, 22-31-2e, show at 2045 ft. Madeline Oil Co., Swanson 1, 33-35-4w, dr 550 ft.

WYOMING

BIG HORN—Agate Oil Co., ne 13-51-92, dr. Utah Southern Oil Co. 3, 29-56n-97w, showing at 2250 ft. Wisconsin-Himes, 9-34-94w, dr 560 ft.

CARBON—Graybeal Synd., 16-28-91, abn below 4000 ft. Pacific American Oil Co., 31-25-91w, lcn.

CONVERSE—A. E. Tylee, ne 8-32-72, rig. Criterion Oil Co., Irvin 1, 5-31-70, coring below 3364 ft. John Ackard, McKinley 1, 21-31-69, suspended for winter.

FREMONT—Producers & Refiners, Muskrat 1-34-34-92, dr 1310 ft. Texas Prod. Co., Alkali Butte 1, 1-33-92, dr 495 ft. Zola Oil Co. Crook's Gap 1, 25-27n-93w, sd for winter, at 3750 ft. Iowa-Wyoming Inv. Co., 30-1s-2e, attempting water shutoff at 1500 ft.

JOHNSON—Fairway Oil Co., Crazy Woman 1, 7-47-82, at 2025 ft. Tarrant Synd. 2, 17-46n-82w, ur at 3625 ft. Murphy & Grove, 10-41n-80w, dr below 900 ft.

NATRONA—North Casper Creek O. & G. Co., se 1-36-82, sd. Combs Inv. Co., 12-39-78, dr below 500 ft.

NIOBRARA — Penn-West Pet. Co., 13-35n-62w, resuming at 800 ft. Hollingsworth Bros. 17-39-79, fsh tools at 1710 ft.

PARK—Union of Calif., Taylor 1, 22-47-101, dr 2745 ft. Fred G. Ostland, Hoodoo Ranch 1, 23-51-101, dr 1550 ft. Honolulu Oil Corp., Four Bear 1, 29-48-103, fsh 2775 ft. Ralph Arnold & Charles Mau, nw¼, 25-58n-98w, dr 1580 ft. Ydoc Oil Co., ne 6-51n-101w, dr 800 ft. Honolulu Oil Co., Pitchfork 1, 14-48n-102w, lcn. Hoodoo Oil Co., 36-51-101, dr 60 ft.

PLATTE—Walter Adams, Trustee, sec 1313-25-66, dr 1700 ft.

SWEETWATER—Boar's Tusk Oil Co., 16-23-104, showing reported. Prairie O. & G. Co., Tucker 1, 18-13-99, sd for winter at 510 ft. P. & R. Marland of Colo., 26-20-104, dr 485 ft.

WASHAKIE — P. & R. Corp., Tensleep 1, 13-46-89, dr 3165 ft.

WESTON—Unknown persons, ne 15-44-64, dr 450 ft.

UINTA—Uinta Oil & Dev. Co., in Evanston, dr below 1080 ft.

SOUTHWEST TEXAS

Completion

WEBB COUNTY—
Houston Oil Co., Benavides 3..... ° 3014

DUVAL COUNTY—
Houston Oil Co., Benavides 2-C.... ¶30 1537

DUVAL COUNTY—Associated Oil Co.'s Sutherland 1, dr O. W. Killam's Lopez 3, 4, 5, and 6, dr. O'Hern and Secord's Schlessinger 1, dr.

JIM HOGG COUNTY—Andrews Pet. Co.'s M. S. Bank 1, dr; Palacious 1, dr. Bagger & Maddox's Nos. 1, 2, 3, and 4, sur 81, dr. Miller Shaw's Jones 1, sd. Moody Oil Corp.'s No. 1, blk 29, dr. Paesano Oil Co.'s Las Vivorcitas Grant 1, dr 2685 ft. Simms Oil Co.'s Leyendecker 1, dr. A. and M. Stacy's No. 1, dr.

WEBB COUNTY—Associated-Carson's Webster 2, dr. J. M. Basharaus' Espjo 1, dr. Cole Pet. Co.'s No. 36, sd at 5525 ft; No. 50-A, dr 60 ft. Houston Oil Co.'s Benavides 1, dr; Benavides 3, abn 3014 ft. O. W. Killam's Puig 1, dr; Benavides 8, fsh 3965 ft. T. P. Morgan's No. 2, blk 23, section 335, dr. Nelson Drilling Co.'s Puig 1, dr. Newton Drilling Co.'s Bruni 2, dr. Rio Grande Oil Co.'s No. 1, Santo Thomas Grant, dr

ZAPATA COUNTY—Henne, Winch & Farris' Martinez 1, dr. Hill et al's No. 1, Villa Grant, dr. O. W. Killam's Lopez 1, dr; Benavides 1, dr 1210 ft.

WEST TEXAS

Completions

PECOS COUNTY—
Kirby Pet. Co. et al, Turney 1.... * 1189

STONEWALL COUNTY—
Peer Oil Corp. et al, Morrow 1.... * 3038

ANDREWS COUNTY—Amon G. Carter & Henry Zwelfel's Cowden 1, elev 3156 ft, top salt 1575 ft, top lime 4150 ft, dr 4795 ft. J. S. Cosden et al's Bedford-Ratliff 1, sd 4116 ft. Calvin-Belt et al's Bedford-Ratliff 1, elev 3195 ft, top salt 1610 ft, dr 3000 ft. Deep Rock Oil Co.'s Harris 1, elev 3173 ft, co 1050 ft. C. B. McKennon et al's Means 1, elev 3137 ft, heaving sand 1395 ft.

BORDEN COUNTY—Marland Oil Co.'s McDavid 1, dr 640 ft.

BREWSTER COUNTY—Cowden-Bowser et al's Jackson-Harmon 1, lcn. J. M. Hickey et al's Jackson-Harmon 1, dr 505 ft. Van McPhail et al's McIntyre 1, sd 1057 ft. Mid-Kansas O. & G. Co.'s Turney 1, dr 2005 ft. Reese & White's Kimball 1, dr 915 ft. Wilcox-Anderson et al's Gage 1, sd 1585 ft.

COKE COUNTY—Brown et al's Foster 1, sd 2250 ft. Danciger O. & R. Co.'s Byrne 1, set cas 3100 ft. Lipan Oil Co.'s Conner 1, dr 3065 ft; Rawlings 1, dr by junk 2736 ft.

CONCHO COUNTY — Exploration Co.'s Hartgrove 1-A, dr 725 ft. Lawson & Park's Schultz 1, sd after shot 30 quarts 1090 ft.

CRANE COUNTY — Crane County Dev. Co.'s Mosely-Brookfield 1, sd 460 ft. Duffey & Gault Brown's Cowden 1, elev 2537 ft, top salt 895 ft, top lime 2729 ft, sd 3205 ft. Gulf's Waddell 3, dr 600 ft. Texas Dev. Co.'s Cowden 1, top lime 2635 ft, dr 4005 ft.

CROCKETT COUNTY—J. S. Cosden et al's Paul Perner 1, set 15¼ cas 615 ft. Corbett & Gill's University 1, sd 2050 ft. W. Donnelly & J. D. Young's Shannon 1, sd making gas 1664-80 ft; Shannon 2, lcn; Massie 1-A, spd and sd; Toff 1, lcn. Gulf's Thompson 3, dr 505 ft. Jas. Kelly et al's Todd 1, elev 2661 ft, top salt 993 ft, sd 2605 ft. C. A. Jones et al's Powell 1, sd for shot with 1500 ft oih 2590-2621 ft. McMannon Oil Co.'s Blakeney 1, elev 2440 ft, sd 4050 ft. Osage Oil Corp. et al's Halff 1-A, dr 80 ft. Bob Penn et al's Powell 1, elev 2759 ft, top salt 1065 ft, dr 2105 ft. Simmons Oil Co. et al's Halff 1, top salt 445 ft, show oil 610-25 ft. World Oil Co.'s Schneeman 1-B, elev 2663 ft, fighting heaving mud 2330 ft.

CULBERSON COUNTY—Deep Rock Oil

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30,000 ft.	4"	used line pipe	5,000 ft.	8-1/4"	used casing
20,000 ft.	6"	used line pipe	5,000 ft.	10"	used casing
10,000 ft.	8"	used line pipe	1,000 ft.	12½"	used casing

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Co.'s T & P Fee 2, dr 1110 ft. Jas. Gardner et al's Radford 1, sd 610 ft.

JEFF DAVIS COUNTY—Humble O. & R. Co.'s C. Flores 1-A, sd 2500 ft. E. L. Smith Oil Co.'s Means 2, dr 2100 ft.

ECTOR COUNTY—Cosden & Texas Co.'s Connell 5, elev 2843 ft, top salt 925 ft, dr 2900 ft.

FISHER COUNTY — Cranfill-Reynolds et al's J. A. Young 1, dr 1725 ft. The Texas Co.'s Dan Stephens 1-A, dr 2270 ft. Marland & Vacuum Oil Co.'s Lagow 1, co 3500 ft.

GARZA COUNTY — Gulf's Swenson 1-A, elev 2492 ft, top salt 495 ft, dr 1405 ft.

GAINES COUNTY—Westheimer & Daube's Forbes 1, fsh 4660 ft.

TOM GREEN COUNTY—Cox et al's Llano 1, sd 407 ft. Fitzgerald & Taliaferro's Bennett 1, dr 1715 ft; Haubelt et al's Johnson 1, sd 580 ft. Marland Oil Co.'s Johnson 1, dr 2465 ft; Johnson 1-A, dr 1400 ft. Tulsa Oil Co.'s Adams 1, sd 1020 ft.

HOCKLEY COUNTY—World Oil Co.'s Ellwood 1, elev 3363 ft, set cas 1400 ft.

HOWARD COUNTY—Bristow & Merrick's Hooks 4, dr 1530 ft. The California Co.'s Fisher 1, elev 2623 ft, dr 3240 ft. Coyle-Concord Oil Co.'s Roberts 1, dr 1650 ft; Roberts 2, dr 1465 ft; Roberts 3, spudding. Dixie Oil Co.'s Clay 2, dr 2600 ft. F-H-E Oil Co.'s Roberts 1-C, rig; Roberts 1-D, spd and sd. Godley O. & G. Co.'s Hooks 2, dr 1250 ft; Hooks 3, rig. Henshaw & Co.'s Settles 1, sd 1900 ft. Lee & Neely's Harry Hyman 1, dr 730 ft. Lockhart & Co.'s Roberts 1, lcn. Magnolia's G. O. Chalk 8, dr 1630 ft; Kelly-Chalk 9, dr 715 ft; Mary-Chalk 8, dr 1175 ft; Roberts 2, rig. Marland Oil Co.'s Clay 1-E, dr hfw 3440 ft; Clay 6-A, dr 1805 ft; Clay 7-A, dr 1670 ft; Richardson 1, top salt 870 ft, dr 1440 ft. Marland & Texon's Connally 1, sr 3887 ft. Marland-Zoch et al's Jones 1, top salt 970 ft, sd 1670 ft. Mays-Nixon et al's Flowers 1, dr 250 ft. Miley Oil Corp. & Marland's Red 1, spd and sd. Owen-Sloan et al's Roberts 1, dr 1700 ft. Peer Oil Corp.'s Read 1, ur 3130 ft. Shermerhorn Oil Co.'s Roberts 1, dr 1475 ft. Sprague Oil Co.'s Roberts 1, lcn. Sun Oil Co.'s W. R. Settles 1, lcn. Sweeney & Henry's Chalk 2, rig; Chalk 3 and 4, lcns; Chalk 5, dr 975 ft. Vitek Oil Co.'s Clay 1, co after shot 1786 ft. Ward Oil Co.'s Roberts 1, dr 580 ft. Weekly Oil Corp.'s Roberts 1, machine.

HUDSPETH COUNTY—Lockhart & Co.'s Moore 1, dr 905 ft; Gardner-Mosely 1, sd 260 ft.

IRION COUNTY—F. E. Webb et al's J. M. Nutt 1, machine.

JONES COUNTY—E. P. Campbell et al's Herndon 1, sd 3009 ft. R. F. Garland & Co.'s Glynn 1, sd 2430 ft. Gibson-Johnson's R. J. Camp 1, ur 2143 ft. Hutson-Weaver's Smith 1-A, sd 1980 ft. W. G. Stough et al's Bennett 1, sd 800 ft; Willis 1, sd 1740 ft. Swensondale Oil Co.'s Canton 1, dr 3185 ft.

KING COUNTY—Humble's Pitchfork 1, dr 2830 ft. Pattison et al's Patton 1, dr 3090 ft.

LOVING COUNTY—Lockhart & Co.'s Fee 1, lcn.

MIDLAND COUNTY—Shoup et al's Roy Parks 1, lcn.

NOLAN COUNTY — John H. Winemiller Corp.'s Arledge 1, set 12½ cas 700 ft.

PECOS COUNTY—The California Co.'s Smith 4, ur 810 ft; Smith 5, dr 670 ft; Smith 6 and 7, machines; Smith 8 and 9, lcns; Yates 2, rig; Yates 6, flowing oil in pay 1094-1111 ft; Yates 8, dr 1105 ft. Cummings et al's Blackstone-Slaughter 1, dr 1705 ft. Crude Oil Co.'s Pecos River Bed 5, rig; Bed 11, dr 300 ft. Day Bros. & McKnight's Yates 1, elev 2213 ft, top salt 440 ft, fsh 800 ft. Douglas Oil Co. & Roxana's Sellman 2, lcn. Gibson Oil Corp.'s Russell 1, rig. Gulf's Smith 2, flowing by heads, dr pay 1295-1335 ft; Smith 3, dr 415 ft; Smith 4, dr 315 ft; Smith 5, machine; Yates 1, dr oil pay 1363 ft; Yates 4, 5, 6 and 7, machines. Geo. A. Henshaw & Co.'s Corder 1, lcn; Sweatt-Hinyard 1-A, elev 2270 ft, dr 1645 ft. Humble O. & R. Co.'s Smith 4, ur 750 ft; Smith 5, dr 250 ft; Smith 1-B, top lime 1309 ft, dr 1315 ft; Smith 3-B, machine. Kershaw & Livingston's Cannon 1, cellar dug. Robt. Leet et al's Parker 1, rig. Marland Oil Co.'s Yates 5-A, dr 900 ft; Yates 8-A, dr 1017 ft; Yates 9-A, dr 360 ft; Yates 10-A, dr 470 ft. McMan O. & G. Co.'s Tippett 1, rig. McMan & Marland Oil Co.'s Yates 11, cem cas 1126 ft; Yates 12, dr 780 ft; Yates 13, dr 420 ft; Yates 14,

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Very truly yours,
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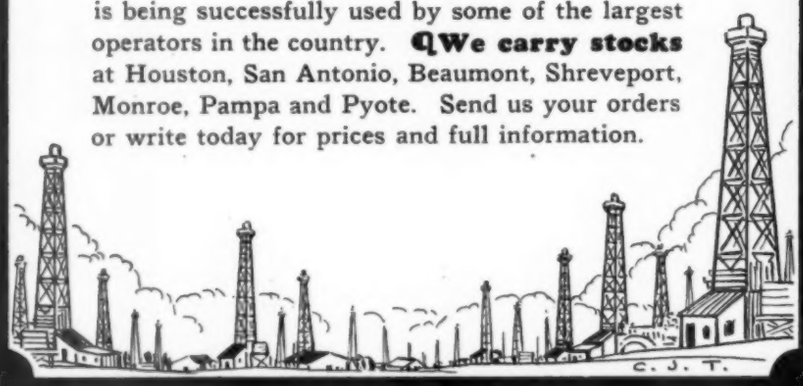

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REAGAN COUNTY—Camp & Henshaw's University 1, elev 2772 ft, top salt 1130 ft, fsh 2075 ft. Skelly Oil Co.'s University 1, elev 2895 ft, top salt 1340 ft, dr 2740 ft. J. T. White et al's Shafner-Sterling 1, sd 675 ft.

REEVES COUNTY—The Exploration Co.'s A. A. Kinney 1, dr 1280 ft. D. R. Thompson et al's Eddins 1, dr 3615 ft. Grisham-Hunter Corp.'s Rathage-Conner 1, machine. World Oil Co.'s A. L. Duff 1-A, elev 2774 ft, plugging back from 4514 ft.

RUNNELS COUNTY—Empire Gas & Fuel Co.'s Clay 1, dr 1435 ft. Gibson-Johnson's Harris 1, lcn; Serratt 1, rig. Kenwood Oil Co.'s Talley 1, sd 1720 ft. Noble O. & G. Co. et al's Simms 1, dr 2940 ft. Henry B. May et al's Schneider 1 ,elev 1666 ft, dr 1075 ft. Miles Oil Co.'s Lawhon 1, sd 2250 ft; Chas. Ray 1, dk. Royal Pet. Co.'s Willingham 1, lcn. Swensondale Oil Co.'s Werner 1, elev 1803 ft, dr 1805 ft. Owenwood Oil Corp.'s Fowler 1, lcn. Watchorn O. & G. Co.'s J. L. King 1, dr 605 ft.

SCHLEICHER COUNTY—Thos. Gray et al's Robinson 1, ur 3020 ft.

TAYLOR COUNTY—A. J. Brown Prod. Co.'s Henslee 1-A, elev 2010 ft, dr by ugs 2265 ft. Owen-Sloan's Latimer 1, sd 2605 ft. Roesser-Pendleton Inc.'s Butman 1, set cas 2765 ft. Gilbert Johnson & Dyar Bros.' Brown 1, ur 835 ft.

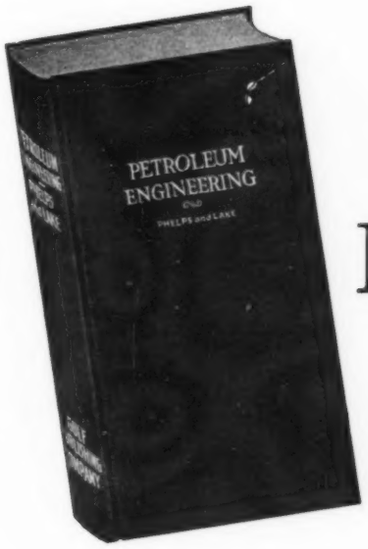
TERRELL COUNTY—W. W. Donnelly et al's Proesser 1, lcn. Deep Rock Oil Co.'s H. C. Noelke 1, rig. Milham Corp.'s Bassett 1, spudding.

UPTON COUNTY—Mark Curtis et al's Giddings 2, sd 630 ft. Southern Crude's Hobbs 1, elev 2510 ft, top salt 535 ft, dr 1800 ft. The Texas Co.'s Cordova Union 1, (sec 23) elev 2576 ft, top salt 580 ft, top lime 1948 ft, co to deepen, td 2318 ft.

VAL VERDE COUNTY—Douglas Oil Co.'s Sellars 1, sd 4100 ft. Magnolia Pet. Co.'s Whitehead 1, dr 4330 ft. O. O. Owens et al's Henry Mills 1, dr 3015 ft.

WARD COUNTY—Stivers & Kissler's Dooley 1, lcn.

WINKLER COUNTY — Amerada Pet. Corp.'s J. B. Walton 1, elev 2833 ft, fsh tools in gas pay 2405 ft. Atlantic Oil Prod. Co.'s Grisham-Hunter 2, dr 2640 ft; Grisham-Hunter 3, lcn; Grisham-Hunter 1-C, dr 2345 ft; Grisham-Hunter 1-E, dr 1875 ft; Hendricks 1, dr in oil pay 2830-70 ft; Hendricks 1-D, cem cas 2559 ft; Hendricks 2-D, dr 330 ft; Hendricks 1-F, rig. Arizona Mining & Engineering Co.'s Hendricks 1, spd and sd. V. T. Bolin & Co.'s Brown 1, spd and sd. The California Co. and Cranfill Bros.' Bashara 1, elev 2983 ft, dr 3435 ft. Cranfill-Reynolds et al's Hendricks 1-B, cem cas and stdz 2359 ft; Hendricks 1-C, rig. Eastland Oil Co.'s Hendricks 1, sd making gas 2532 ft. Gulf Prod. Co.'s Hendricks 2, rig; Hendricks 3, flowing 45 bbls hourly, dr 2940 ft; Hendricks 5, making 25 million ft gas, dr 2790 ft; Hendricks 6, flowing 75 bbls hourly, dr 2885 ft. Humble O. & R. Co.'s Grisham-Hunter 1, installing rotary in gas 2763 ft;



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Grisham-Hunter 3, fsh stem in big gas 2370 ft; Hendricks 2-B, dk; Hendricks 3-B, top line 2844 ft and cem cas. Independent O. & G. Co.'s Grisham-Hunter 2, co and flowing 1670 bbls oil and 30 million ft gas 2815 ft; Grisham-Hunter 3 and 4, lcns; Grisham-Hunter 5 and 6, rigs; Grisham-Hunter 1-B, dr 1260 ft; Grisham-Hunter 2-B, and 3-B, dks; Hendricks 1-B, (sec 44) dr with 2800 ft oih 2846-2951 ft. Landreth Prod. Corp. & Roxana's Hendricks 1-A, swabbed 35 bbls oil after shot 200 quarts at 2874-2926 ft; Hendricks 2-A and 3-A, dks; Hendricks 4-A, dr gas 2840 ft. Liner Drilling Co.'s Campbell 1, spd and sd. Magnolia Pet. Co.'s Hendricks 1, elev 2713 ft, flowing 60 bbls hourly, dr 2713-2863 ft; Hendricks 2, top lime 2512 ft, dr 2615 ft; Hendricks 3, top salt 1410 ft, dr 2015 ft; Hendricks 4, spudding; Hendricks 5 and 6, rigs. Murchison Oil Co. and Cranfill's Grisham 2, 4 and 1-B, lcns; Grisham-Hunter 2-B, showing oil 2890-2900 ft, td 3007 ft; Grisham-Hunter 3-B, cem cas 2427 ft; Grisham-Hunter 4-B, dr 2735 ft. Joe Maxwell & L. C. Turman's Hendricks 1, sd flowing 75 bbls daily 2879 ft; Hendricks 2, top lime 2452 ft, dr gas 2675 ft; Hendricks 3, top lime 2480 ft, cem cas 2580 ft. Pure Oil Co.'s Grisham-Hunter 2, sd hfo 2657-2815 ft; Grisham-Hunter 3, cem cas 2360 ft; Grisham-Hunter 1-B, (Sec 34) installing rotary account big gas 2720 ft; Grisham-Hunter 2-B, dr 2387 ft; Grisham-Hunter 3-B, dr plug 2438 ft; Grisham-Hunter 4-B, lcn. Republic Prod. Co.'s Grisham-Hunter 1-A, dr in big gas 2798 ft; Grisham-Hunter 1-B, (Sec 41) cem cas 2288 ft; Grisham-Hunter 2-B, dr 2240 ft. Roxana Pet. Corp.'s Grisham-Hunter 1-A, (Sec 45) sd, spraying oil and gas 2801 ft; Hendricks 1-B, (sec 29) co to dd, td 3002 ft; Hendricks 2-C, rotary rig; Hendricks 1-D, dr 2415 ft; Hendricks 2-D, lcn. Sheldon & Burden's Hendricks 1, elev 2806 ft, top salt 1260 ft, dr 2440 ft. Southern Crude & R. A. Westbrook et al's Grisham 1-A-T-89, sd making oil and gas after shot 2687 ft; Grisham- 2-A-T-89, dr 2295 ft; Grisham 3-A-T-89, dr 1935 ft; Grisham 4-A-T-89, lcn; Grisham 2-B-T-88, (Sec. 4) cem cas 2659 ft; Hendricks 1-C-T-88, (Sec. 28) fsh 2879 ft; Hendricks 2-C-T-88, dr plug 2435 ft; Hendricks 3-C-T-88, cem cas 2499 ft; Hendricks 4-C-T-88, dr 2260 ft; Hendricks 5-C-T-88, dr 1125 ft; Hendricks 6-C-T-88, top salt 1270 ft, dr 1460 ft; Hendricks 7-C-T-88, dr 2185 ft; Hendricks 1-B-T-88, lcn; Hendricks 1-I-T-88, rig; E. G. Hutchings 1-T-90, rotary dk. Southern Crude & Dixie Oil Co.'s Grisham-Hunter 1-A-3-T-68, fsh tools with hfo 2740 ft; 2-A-3-T-68, sd storage 2288 ft; 3-A-3-T-68, cem cas 2118 ft; Hendricks 1-A-3-T-67 (sec 4), sd 3072 ft; Hendricks 2-A-3-T-67, sd storage 2646 ft; Hendricks 1-B-T-67, sd storage 2648 ft; Hendricks 4-C-T-67, flowing 400 bbls daily, dr pay 2934-3077 ft. Texon Oil & Land Co.'s Grisham-Hunter 2-A, fsh tools in gas 2725 ft; Grisham-Hunter 3-A, cem cas 2140 ft; Grisham-Hunter 1-B, (Sec 45) sd 1150 ft; Grisham-Hunter 2-B, dr 980 ft. White Eagle O. & R. Co. et al's Leck-Collins 1, elev 2830 ft, top lime 3155 ft, sd 3260 ft.

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Completion

Company, Well and Location	Initial Production Bbls.	Depth
JEFFERSON COUNTY—		
J. O. Davis et al, Gladys 2, Spindle Top	*	5920

AUSTIN COUNTY—Humble's Gotosky 2, Raccoon Bend, dr 1425 ft; Wilson 1, Raccoon Bend, dr 975 ft sandy shale and lime. Alexander & Lyles, Inc.'s Goebel 1, dr 1300 ft hard sand. L. H. Weadock's Ward 1, ru.

BRAZORIA COUNTY — Roxana's Allen Bernard 1, Allen Dome, set strainer at 5335 ft, bailing salt water and oil; Allen 4, has sdtrk and now reaming at 4600 ft, td 4600 ft; Randon 1, Allen Dome, dr 3920 ft hard sandy lime; Bell 2, Clemons Dome, td 4870 ft, cas collapsed at 510 ft, will run Hughes mill.

CHAMBERS COUNTY—Pure Oil Co., Lost River 1, Lost Lake Dome, set cas 1142 ft.

FORT BEND COUNTY—Sun Oil Co.'s J. R. Farmer 3, Boling, abn 2335 ft; J. R. Farmer 4, Boling, ru; Kasparek 1, Boling, dr 1860 ft, gbo. Humble's Sugarland Industries 1, about 10 mi se of Sugarland, moving in material.

HARRIS COUNTY—Dr. P. S. Griffith's Fee 2, 12 mi n of Houston, sd 3517 ft. Juanita Oil Co.'s Kiteman 1, 3 mi n of Cypress, td 1180 ft. Humble-Marland's Warren 2, Hockley, dr 2790 ft gbo and lime.

JEFFERSON COUNTY — Deep Test Oil Co.'s McFaddin 1, 4 mi ne Spindle Top, sd 2170 ft. Southern Spindle Top Oil & Dev. Co.'s Young 1, sd 2510 ft; J. O. Davis et al's Gladys 2, Spindle Top, abn 5920 ft.

LIBERTY COUNTY—Harrison Oil Co.'s Quintette 2, N. Dayton, temporarily abn 4602 ft. Judge Titwell et al's Gardner 1, sd 3510 ft. The Texas Co.'s Havard 1, Davis Hill, dr 3440 ft gbo. Matagorda County Dev. Co.'s Hawkins 1, Bay Cilty, sd 1988 ft.

WALLER COUNTY—J. R. Garrett et al's Garrett 1, 12 mi e of Hempstead, dr 970 ft shale.

WHARTON COUNTY—Ingram Prospecting Co.'s Hounshell 1, lcn.

SOUTH LOUISIANA

ASCENSION PARISH—Gulf's United Lands Co. 4, Sorrento Dome, lcn sec 15, t-10-s, r-4-e.

CAMERON PARISH—Pure Oil Co.'s Sweet Lake 3, Sweet Lake, fsh 5897 ft; Sweet Lake 4, Sweet Lake, fsh 5141 ft; Sweet Lake 5, Sweet Lake, sd 5140 ft. La. Land & Explo. Co.'s Calcasieu Lake A-1, Calcasieu Lake, surface cas set at 200 ft. Calcasieu Oil Co.'s Olevia 1, Hackberry, dr below 1000 ft; Watkins 1, lcn 217 ft n of Caldwell 2.

JEFFERSON DAVIS PARISH—La. Land & Explo. Co.'s Vermilion Bay 2, about 26 mi sw of Franklin, off Cypremont Point, rig.

IBERVILLE PARISH—Roxana Pet. Corp.'s Wilbert 1, White Castle, dr 1050 ft gravel and shale. Union Sulphur Co.'s Wilbert 1, Atchafalaya, lcn. Union Sulphur Co.'s Schwing 1, Atchafalaya, lcn.

ST. MARTIN'S PARISH — Rycade Oil Corp.'s Atchafalaya 1 fsh 3916 ft.

ST. MARY PARISH—Jacob Dannebaum's Viguerie 1, Grand Lake, lcn. La. Land & Explo. Co.'s West Cote Blanche 1, sd 2635 ft.

Oklahoma Indians Get $10,000,000 Royalty

Washington, D. C. — Oil and gas leases on 78,286 acres of allotted lands of the Five Civilized Tribes were made by the Interior Department during the fiscal year ended June 30, last, it is disclosed by the annual report of the Secretary of the Interior. This was 18,000 less than was leased during the precednig year.

The allottees during the year received a revenue of $4,846,091 from leases, the report shows. There are now 7050 producing oil wells and 214 producing gas wells on the lands of the Five Civilized Tribes, the gross production for the year being 13,414,-657 barrels of oil.

A total of 411 producing oil wells and 49 gas wells were drilled on the Osage reservation during the year, bringing the number of producing wells to 9887 oil and 776 gas. New leases approved during the year numbered 219, for which the Indians received in bonus payments the sum of $3,953,000. The gross production of oil on the reservation for the year was 25,884,734 barrels, the rental and royalty income for the year being $10,-527,296.

The Indians of tribes other than the Osages and Five Civilized Tribes received a revenue of more than $1,200,-000 from oil and gas leases during the year. Within the Navajo treaty reservation, New Mexico, seven producing oil wells were drilled, making a total of 29 wells now producing there and yielding a gross oil production of 860,208 barrels.

A small producing well has been reported in the Ute Mountain Reservation in southwestern Colorado, the first indication of oil there, it is stated.

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Advantages of Standardized Rigs, Derricks and Rig Irons

(*Continued from page 24*)

The greatest advantages will be to the purchaser and operator in the sense that for his particular purpose, his stock in the field and in his warehouse will consist of probably two or possibly not more than four sizes of derricks, upon which he can standardize for his own operations. This will mean a great reduction in stocks of parts and replacements, greater salvage value and eventually a reduction should be realized by the operator in the original cost of the derrick. The manufacturers of derricks are all desirous of seeing the industry adopt A. P. I. standard derricks as rapidly as possible, realizing that by such a move, their stocks both raw and manufactured will be greatly reduced, and patterns and equipment will be reduced, allowing them eventually to secure a greater turnover with a reflected reduction in the cost of their product to the consumer. Naturally, some of the changes which were necessitated by the A. P. I. standards have meant considerable additional cost to the manufacturer, making changes in his manufacturing equipment. This cost will have to be absorbed by the new product until such time as the A. P. I. standard derricks will be greatly in the majority, and special order derricks will then have to absorb the additional costs of special designing and special manufacturing, as they are doing today.

Rig irons—these necessary parts of a rig are so commonly known to the driller and production man that it might seem almost superfluous to attempt to analyze them. Through the years they have not been changed greatly in appearance, yet they have gradually become heavier, and in late years, the material has been improved to take care of the ever increasing strains to which they have been subjected. However, these changes and improvements are not uniform with all of the manufacturers and great difficulty and expense has been had by the operators through faulty rig irons and the fact that practically none of the parts of one manufacturer would fit with the parts of another.

FIGURE 5
Standard Taper Type of Derrick.

Everyone who has had experience with rig irons can readily recall any number of instances where wells have been drilling, a rig iron became broken and could not be replaced except by that one manufacturer from his base of supplies or at the mill, and in the meantime, the well must be shut down until the necessary parts arrive.

Big Waste

It has been estimated that from 1869 to date, there has been approximately $350,000,000 spent for rig irons and rig iron outfits, and Mr. H. J. Lockhart has pointed out that while in the early days, rig irons were light and did not represent much money, but had standardization been accomplished then and had the early operators had the vision to forsee and inaugurate what is now being accomplished by the standardization committee on rig irons of the A. P. I., there could have been saved approximately $35,000,000. Information gathered from operating companies segregated and compiled by those in charge of standardization has shown that an approximate total of 15 per cent can actually be saved by the use of standardized irons: 10 per cent of this total would be accrued to the purchaser. These percentages may seem somewhat small but it must be remembered that it is spread over the entire purchases of the industry whereas in an individual case, where interchangeability of irons is required, the saving might amount to an extremely high figure.

The specifications of the rig irons committee as worked out by practically all the manufacturers of rig irons, representative operators and engineers, have been completed for over a year now and production of these irons has been going on for some months by the manufacturer. In the Seminole field, which is the one with which we are most recently acquainted, there have been about 75 sets of standard A. P. I. rig irons used, and from an investigation of these, we find that they have been highly satisfactory and desirable to the men who are using them. There were 746 complete new sets of rig irons in use, representing approximately $750,000. Considering the fact that license has been granted for the manufacture of rig irons under the A. P. I. standard specifications within the year, we feel the fact that about 10 per cent of the irons in this new field are standard A. P. I. irons, shows that some progress has been made, and that the advantages of the new irons are realized by the operators.

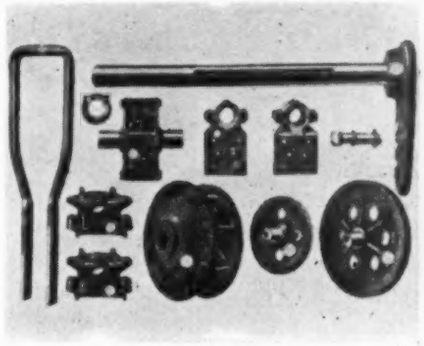

FIGURE 6
Miscellaneous Standardized A. P. I. Rig Irons.

In order to make a very definite and specific test as to the interchangeability of rig irons made under the A. P. I. specifications as compared with those previously manufactured and which were not interchangeable, we recently secured old style rig iron parts from two different manufacturers and attempted to assemble them. However, due to the fact that the integral dimensions were not the same, we were unable to make the parts fit together in any kind of workable manner. Then the parts of two different manufacturers as made under the A. P. I. specifications were assembled, taking the crank shaft, flanges and one jack post box, with saddle of one manufacturer and one jack post box, wrist pins, two side irons, caps, sprockets and clutch of another manufacturer and after the assembly of these, we found that all of the parts fitted together perfectly. This test was made at the Industrial Exhibit of the Tulsa Purchasing Agent's Association, where the parts were made available by the different manufacturers.

Another example was a test made of the interchangeability of sheaves and crown block bearings. A crown block was set up to accommodate six sheaves. Then sheaves and boxes of

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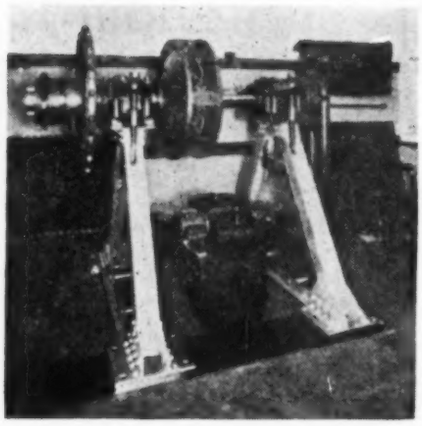

FIGURE 7
Rig Iron Parts of different manufacturers made to A. P. I. Specifications, showing perfect assembly.

three manufacturers, as made according to the individual custom of each manufacturer, were assembled and it was found, due to the various lengths and diameters of trunnions and other differences in dimensions, that the assembly was impossible.

Throughout the standardization program, considerable thought has been given to the utilization of old style equipment until such time as standardized equipment is wholly used, and the manufacturers are attempting to make the new equipment interchange with the old wherever it is possible; for instance, in connection with the chain driven calf wheel attachments, one manufacturer has made a key that fits the A. P. I. standard shaft and also fits the keyway on the clutch formerly used, so that the chain driven calf wheel attachments now on hand are being used with the A. P. I. standard shafts.

After Mr. Pew's committee on tubular goods had completed its specifications, there was apprehension on the part of some as to how rapidly the in- Most of this apprehension has been dustry would adopt the new pipe. put at rest, however, since the pipe is being manufactured and used and has been found superior to the old pipe. The users are satisfied and are continuing their orders on the standard specifications.

This condition now prevails with rig irons. They are being used and found satisfactory and as soon as the opera-

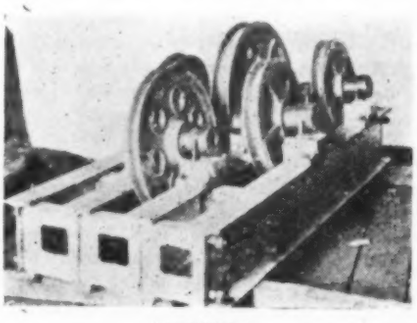

FIGURE 8
Crown Block Pulleys of different manufacturers as made under old practice, showing assembly impossible.

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1500 acres NE. Terrell County, paid up for 10 years.

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Pecos County scattered tracts.

3000 acres eastern Irion County.

4000 acres Loving County.

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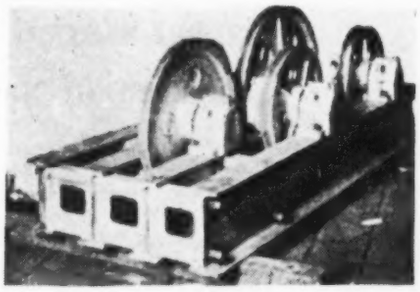


FIGURE 9
Crown Block Pulley Assembly of different manufacturers, made to A. P. I. specifications, showing all parts assemble perfectly.

tors become more familiar with the new irons, they will be universally used.

The A. P. I. standard rigs and derricks are now ready for manufacture and licenses have been granted or applied for and from assurances of the majority of manufacturers, the new standardized derrick is forthcoming. We are satisfied that slowly but surely, the A. P. I. derrick will replace the present types as the present types have replaced the old wood derricks.

One large manufacturer of rigs and derricks and rig irons who has over three and one-half million dollars invested in inventory, estimates that with the complete adoption of A. P. I. standards, their investment could be reduced to considerably less than two million dollars. Naturally this reduction would be reflected to the purchaser.

The standard A. P. I. specifications will enable the man who erects and uses standardized rigs and derricks and rig irons on the job to always know the dimensions of these tools, how much load he can pull with them, just what he can do with them and at about what point he can expect them to fail.

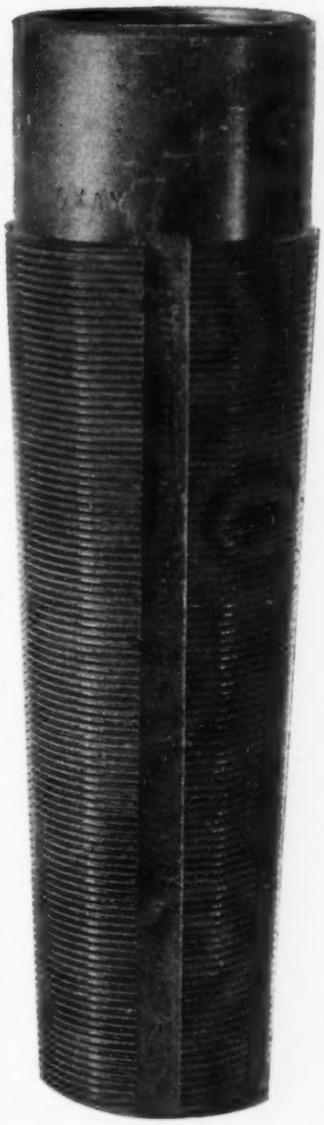
Houses Interchangeable

Standardization of derrick dimensions makes possible the use of interchangeable houses, such as pump house, rotary engine house, bull wheel house and band wheel house. These can be moved from job to job as well as being used interchangeably on towers made by different manufacturers. With the standards in band wheels, shafts and sand reels, more progressive manufacturers are coming out with machinery supports having great flexibility. Jack posts are readily adjusted to A. P. I. shaft length, and sand reel posts are adjustable sidewise for shaft lengths as well as fore and aft for band wheel diameters, spooling and adjustment. This leads to unitary machinery supports with separate units that will fit up interchangeably to any size of derrick.

As has often been said and written, the advantages of standardization are considerably more than simplification of equipment and reduction of stocks, since the committees, who have been working along scientific lines, have had in mind giving the industry a more

GRAY GRAY

GRAY Taper Taps



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uniform and better quality of material, interchangeability and a higher workmanship of product.

Truly the operations of the industry have become more technical within the past few years and this tendency is bound to increase with a more scientific study of its requirements and problems, what with deeper drilling and the ever increasing cost of operation, due to necessarily heavier and more efficient material and equipment, the industry has exacted greater care and ability in the selection and use of its material, and this has been uppermost in the minds of the members of the committees who drafted the specifications for the standardization of rigs and derricks and rig irons.

Ultimate economic operation, utilization of energy and equipment, elimination of waste, simplification of design, standardization—these are some of the terms of which we hear a great deal lately and on some of which we are not entirely clear as to their meaning. They are, however, essential in the operations of this particular industry where the extensiveness of operation and the intensive ramifications require the best we can get for the money. In the end, these terms all tend to mean standardization in its broader interpretation, and that is what these committees of the A. P. I. have been working toward for five years to bring to the industry by the way of standardization, equipment of a greater efficiency that can be had for a lesser cost.

Advantages can be had only with possession, possession both of knowledge and product, so that we urge the operator, executive, engineer, superintendent, purchasing agent and foreman to put to use the A. P. I. standard specifications which have been worked out by representative members of the industry for the benefit of the nidustry.

Proposed Rail Line Will Serve Hendricks Field

Dallas, Texas.—Initial steps towards giving the Hendricks field, located in Winkler County section of West Texas, direct railroad facilities has been taken by the newly organized Texas & New Mexico Railroad Company, by obtaining a charter under the laws of Texas and filing an application with the Interstate Commerce Commission. According to G. O. Bateman, president of the above concern, it is proposed to extend a line from the Texas & Pacific Railroad at Monahans, Ward County, Texas, through the field proper for a total distance of about 25 miles. The Hendricks field will be the second largest oil producing area in West Texas shortly, and is 18 miles from the nearest railroad point. Drilling activity will probably reach its peak before this proposed rail line reaches the field.

Government Report on Railroad Fuel Oil Consumption Shows Decline in 1926

Washington, D. C.—Increased prices of fuel oil, especially in the South Central States, and increased efficiency in its utilization, especially in California, Texas, and Louisiana, caused a slight decrease in consumption by the railroads of the country in 1926, as compared with 1925, says the United States Bureau of Mines, Department of Commerce, in a recently issued report. Although the general consumption of fuel of all kinds by Class I railroads increased 0.53 per cent in 1926 over 1925, the quantity of fuel oil consumed by locomotives on Class I railroads decreased 0.33 per cent, and the fuel oil consumed by all railroads for which information is available decreased 0.9 per cent, from 69,461,119 barrels in 1925 to 68,836,850 barrels in 1926.

The principal decreases took place in the California district; in the South Central district, and in the Atlatnic district. Railroad fuel oil consumption increased slightly in the Oregon-Washington district, and to an unimportant extent in the Rocky Mountain district.

During 1926, a total of 71,446,956 barrels of fuel oil was purchased by the 152 Class I, II and III railroads included in the Bureau of Mines compilation. Of the total amount purchased, 68,836,850 barrels was consumed, and 2,610,106 barrels added to the quantity in storage. Railroad stocks of fuel oil at the end of 1926 amounted to 16,541,845 barrels, as compared with 13,931,739 barrels at the beginning of the year. Of the total consumed, 59,329,690 barrels was burned as locomotive fuel, and 9,507,160 barrels was consumed in shops, power plants, ferry boats, and other uses than for firing locomotives.

Although each of the 152 railroads used some fuel oil in its operations, comparatively few used it in large quantities. Only two railroad systems purchased more than 5,000,000 barrels each; and these two consumed jointly nearly half the fuel oil burned by arilroads in the United States. Only six railroads purchased between 2,000,000 and 5,000,000 barrels, 19 railroads between 500,000 and 2,000,000 barrels, 19 railroads between 100,000 and 500,000 barrels, and eight railroads between 50,000 and 100,000 barrels, while 98 railroads purchased less than 50,000 barrels during the entire year.

As in 1925 more than four-fifths of the oil burned by railroads in the United States was consumed in the South Central States and in California. Railroads operating in these two regions consumed 56,458,246 barrels, or 82 per cent of the 1926 total. A little over eight per cent was consumed in Oregon and Washington, and a little over six per cent in the South Atlantic region. The remaining four per cent was consumed in the North Central States and in the area adjacent to the Wyoming and Montana oil fields.

From 15,577,670 barrels in 1906 the consumption of oil as a locomotive fuel has grown more than fourfold in 20 years.

No uniform national tendency either toward the conversion of the coal-burning locomotives to oil burning or the reverse, can be deduced. The quantity of fuel oil used each year varies in each region with the relative costs of oil and coal, the volume of traffic, the adoption of oil burning by railroads previously burning coal or the reverse, and the efficiency of burning.

During 1926, eleven oil-electric locomotives were placed in service and one in April, 1927. The oil-electric locomotive comprises a generator and storage battery unit operated by a Diesel engine. Accordingly, on April 30, 1927, twelve 60-ton, 300-horsepower, and three 100-ton, 600-horsepower locomotives of this type were in use. Thirteen of these were in switching service in New York, Philadelphia, Chicago and St. Paul; one in Utah copper mining operations, and one employed by a California lumber company. Four more oil-electric locomotives were under construction at the end of April, 1927, one 145-ton, 750 horsepower; two 100-ton, 600 horsepower, and one 60-ton, 300 horsepower locomotive.

Manufacturers are experimenting with the construction of larger, more powerful oil-electric locomotives. One company was building in May, 1927, an experimental 1000 horsepower oil-electric locomotive, using a six-cylinder, four-cycle Diesel engine. A second manufacturer is working on a locomotive with a 12-cylinder, four-cycle engine rated at 960 horsepower at 325 revolutions per minute. Three other companies are working on locomotives with a six-cylinder, four-cycle engine rated at 750 horsepower at 500 revolutions per minute. One railroad company has designed a new type of Diesel locomotive and is building three of these locomotives in its own shops.

Further details are given in Information Circular 6049, "Railroad Fuel Oil Consumption in 1926," by Arthur Huber Redfield, assistant economic analyst, copies of which may be obtained from the United States Bureau of Mines, Department of Commerce, Washington, D. C.

OKLAHOMA QUARTERLY PRODUCTION REPORT FOR THIRD QUARTER

Following is a list of companies reporting to the Oklahoma Corporation Commission on Gross Production Tax from oil and gas production. The list gives only those companies which reported production valued at more than $5,000 or royalty of more than $2,000.

Star (*) opposite the name indicates royalty. Names without star are producers.

Name and Address—	Barrels	Amount
Atlantic Oil Producing Co., Dallas Texas	757,142.74	$1,035,081.99
Atlantic Oil Producing Co.,* Dallas, Texas	9,866.69	13,359.76
Adams Royalty Co.,* Chicago, Ill.	98,088.10	138,864.66
Adams Royalty Co.,* Chicago, Ill.	1,792.19	2,400.79
American National Bank,* Enid		1,939.40
American National Bank,* Enid		3,490.66
Amster, N. L., Ardmore	8,948.69	12,031.23
Arkansas Fuel Oil Co., Pittsburgh, Pa.	8,295.33	8,447.33
American Pipe Line Co., Wichita Falls, Texas	6,859.29	9,050.30
American Pipe Line Co., Wichita Falls, Texas	7,298.56	9,232.65
American Pipe Line Co., Bartlesville		23,143.02
American Oil Dev. Co., Pittsburgh, Pa.	7,105.63	8,880.24
Argo Oil Co., Denver, Colo.	55,313.23	116,595.96
Argo Oil Co.,* Denver, Colo.		4,880.79
Alton, B. N.,* Tonkawa		10,595.36
American Royalty Petroleum Co.,* Tulsa	1,244.94	2,777.77
American Royalty Petroleum Co.,* Tulsa		3,283.32
Andrews, Walter, et al,* Weslaco, Texas	5,376.57	7,202.36
Andrews, Walter, et al,* Weslaco, Texas		9,030.21
Anhits, James M.,* Muskogee		2,848.74
Anderson & Peterson,* Blackwell		5,510.18
E. C. Aldrige,* Wewoka		38,684.68
Anthony, S. W., Mounds		7,449.29
Andrews, H. N. & Ethel,* Newkirk		2,835.72
Allen, Lizzie,* Bristow		2,183.70
Alexander, J. A., Gdn.,* Okemah		1,998.24
Agirine Oil & Gas Co.,* Tulsa		3,407.17
Andreson, Wilmer and Nettie H. Chase, Los Angeles, Calif.	2,126.36	2,777.81
Alemo Oil Co., Tulsa (Oct., 1925, to Sept., 1927)		65,900.59
Allegany Royalty Co.,* Olean, N. Y.		2,696.71
Amerada Petroleum Corp., Tulsa	2,286,875.64	3,078.586.63
Amerada Petroleum Corp., Tulsa		50,612.05
Amerada Petroleum Corp.,* Tulsa (suspense)	67,304.45	91,843.85
Amerada Petroleum Corp.,* Tulsa (suspense)		329.36
Amerada Petroleum Corp.,* Tulsa (suspense)		422.65
Amerada Petroleum Corp.,* Tulsa (suspense)		15,326.74
Amerada Pet. Corp.,* Tulsa, (Fixico lease)		93,781.76
Anderson, Forest,* Earlsboro		23,913.32
Atlas Royalties Co.,* Tulsa		82,315.19
Atlas Royalties Corp.,* Tulsa	3,394.14	4,529.16
American Royalty Pet. Co.,* Tulsa	2,805.68	4,694.75
American Oil & Ref. Co., Oklahoma City		98,674.20
Apple, S. A.,* Ardmore		23,765.16
Adams & Prince, Amarillo, Texas		8,759.70
Adams, C. F.,* Ardmore		3,320.19
Alma Royalty Corp., New York City		21,871.90
Amster, N. L., Ardmore	6,991.46	11,263.13
Arthur Oil Co., Sistersville, W. Va.	3,963.71	4,864.68
Arthur Oil Co., Sistersville, W. Va.		889.02
Almota Oil Co., Tulsa		9,338.15
Blank, E. J.,* Cushing		11,630.10
Burke, Geo. T.,* Shawnee		2,141.88
Badger, B. J.,* Okmulgee		3,163.26
Bennett, John H.,* Pauls Valley		3,337.19
Britton Johnson Co., Tulsa		8,698.32
Bryan, J. L.,* Chickasha		3,751.29
Baker, Stacy,* Okmulgee		8,637.76
Baker, T. J.,* Okmulgee		9,293.51
Billings, Henrietta M.,* Enid		5,683.43
Brown, J. W.,* Blackwell		2,716.27
Bryant, H. E. & Jesse F., Earlsboro	45,030.14	56,551.25
Barbara Oil Co., Oklahoma City	7,140.19	11,324.65
Brown, A. C., Oil Enterprise, St. Louis, Mo.	7,180.76	8,769.33
Boepple, Ben, et al,* Covington		2,893.94
Barnum, Jamie L., Estate* Kaw		2,781.88
Boggs Oil Corp., Oklahoma City		24,570.80
Brann, James, Receiver, Bartlesville		9,454.72
Brann, James, Receiver, Bartlesville		3,061.69
Burton Springfield, Tulsa		20,377.83
Bombarger, C. C.,* Paden		3,543.70
Ballard, James,* Cushing		5,503.17
Bird, J. W., & William Hanley, Bradford, Pa.	6,090.02	7,682.10
Beatty, Nettie E.,* Los Angeles, Calif.	1,712.06	2,042.81
Blasdel, May,* Blackwell		2,305.02
Bay State Oil & Gas Co. & Paden Oil Co., Kansas City, Mo.	4,829.13	6,343.20
Bay State Oil & Gas Co., Kansas City, Mo.	12,065.77	16,222.17
Bowers, A. E.,* Wellington, Kan.	1,475.33	2,096.98
Blue Ribbon Oil & Dev. Co., Shawnee		12,781.77
Bechtel, E. R.,* Blackwell	5,156.76	6,902.02
Bu-Vi-Bar Petroleum Corp., Tulsa	2,496.65	5,022.75
Blubaugh, Joe,* Tonkawa		4,127.63
Benton Wilson,* Greenfield, Mo.,		5,702.22
Burks, Lola May,* Braman		3,499.44
Brooke, W. A. & J. E. Carson, trustees, Miller Bros. 101 Ranch, Marland		25,168.39
Barney, Albert Emmet,* Bristow		2,226.44
Barrett, Mrs. Mary F., St. Austin, Texas	2,222.22	2,844.45
Blakeney, B. B.,* Oklahoma City		11,442.65
Burke, John F.,* Tulsa		5,485.79
Brazell, James,* Oklahoma City		3,464.04
Billings, W. S., Long Beach, Calif.		4,782.20
Billings, George M.,* Long Beach, Calif.		4,905.34
Buttram, Frank,* Oklahoma City		35,884.79
Buttram, Frank,* Oklahoma City		526.87
Buttram, Frank,* Oklahoma City		27,018.56
Buttram, Frank, Oklahoma City		10,465.86
Baltic Operating Co., Bartlesville	5,220.65	5,571.21
Belco Royalty, Inc.,* New York City		56,100.10
Blackwell Oil & Gas Co., Blackwell		200,377.74
Blackwell Oil & Gas Co.,* Blackwell		2,114.12
Brann, James, Bartlesville		7,814.44
Brann, James, Bartlesville	961.74	1,170.92
Black, Sivalls & Bryson, Inc., Bartlesville	7,197.88	9,332.42
Black, Sivalls & Bryson, Inc., Bartlesville	6,951.76	8,493.23
Berry Petroleum Co., Tulsa	17,061.21	21,984.43
Burchard & Bina Denker,* Enid		2,322.81
Brownlee & Martin, Tulsa	3,505.08	4,471.49
Bole, George S.,* Tulsa	2,777.66	4,053.20
Bole, George S.,* Tulsa	15,397.93	20,692.31
Buckner, Roy,* Wewoka		2,550.37
Brown, R. D., trustee, Kansas City, Mo.	4,538.62	4,913.49
E. H. Brady, Tulsa	1,379.82	1,735.61
Burlingame, C. E., Bartlesville	5,891.37	7,879.21
Burkhalter, L. J.,* Blackwell		3,273.66
Beard, J. G., & S. I. Kolb, Duncan	6,275.39	8,283.49
Beard, J. G., & S. I. Kolb, Duncan	8,621.29	11,985.52
Crump, T. L., & Beard, Duncan	7,789.03	9,544.68
Biddle, G. A., Braman		3,499.46
Broyles, W. O.,* Stillwater		3,583.75
Brock, John L. Jr.,* Okmulgee	10,015.86	13,525.26
Buchner Co.,* Holdenville		2,434.27
Bumpass, J. M.,* Duncan		5,800.08
Braden & Moore, Tulsa	6,797.49	8,753.47
Braden Co., Tulsa		2,015.80
Barrett, W. S.,* Shawnee		1,961.95
Bolene, V. E.,* Enid		2,553.48
Bolene, V. E.,* Enid		3,072.66
Brown, J. J. Jr.,* Wichita, Kansas		3,076.14
Braymer, A. L.,* Tulsa		3,091.24
Burton, Paul, Tulsa	2,446.10	5,914.26
Brown, W. P. & Maud,* Okmulgee		3,068.90
Billington, C. B.,* Shawnee		4,331.31
Billingslea, F. R.,* Tulsa		24,391.29
Snell, Katie, nee Brown, Dustin		3,256.03
Bermont Oil Co.,* Bristow	4,125.00	6,002.35
Burke, John F.,* Tulsa	2,810.38	3,753.18
Buckner, Roy,* Wewoka		2,656.41
Breene, Frank M., et al, Tulsa	3,858.64	5,096.68
Breene, Frank M., trustee state, Tulsa	7,306.04	9,221.16
Bryon & Emery, Inc., Tulsa		5,091.41
Berry, Thos. N.,* Stillwater		12,719.50
Brown, L. A., & Wife,* Tulsa		24,711.15
Brown, S. J.,* Duncan		3,485.43
Bucholz, Augusta,* Perry		2,967.60
Beacon Oil Co., Bartlesville	7,464.56	9,007.10
Burke-Greis Oil Co., Tulsa	28,788.82	151,689.92
Burke-Greis Oil Co.,* Tulsa		6,803.14
Burke-Hoffeld Oil Co., Tulsa	9,479.55	9,648.43
Baker & Strawn, Tulsa	8,077.24	10,319.07
Belveal,* F. M., Enid		6,027.00
Brice, M. O., Okemah		3,112.28
Braman Oil Co., Inc., Tulsa	8,716.54	11,723.11
Barnsdall Oil Co., Tulsa	2,440,752.69	3,230,384.50
Barnsdall Oil Co.,* Tulsa	1,405.01	1,904.79
Barnsdall Oil Co., Tulsa		63,175.52
Barnsdale Oil Co.,* Tulsa	182,776.09	243,483.40
Buck, William,* Wetumka		4,041.83
Born, H. A.,* Seminole		3,938.55
Cornelius, Minnie Lee,* Muskogee		1,988.01
Commonwealth Trust Co., Okmulgee	5,394.57	6,970.06
Campbell, John C.* Oklahoma City		10,146.32
Coe,* R. W., Ardmore		2,013.72
Coline Oil Co. Oklahoma City	76,134.12	78,829.28
Champlin & Bass., Inc., Holdenville	7,956.72	10,397.51
Chapman, J. O.* Waxahachie, Texas		3,413.96
Clark & Cowden, Duncan	32,521.82	41,230.77

Name and Address— Barrels Amount

Name and Address—	Barrels	Amount
Chapman, J. A. Tulsa	8,875.71	12,370.49
Cooper, John T.,* Wewoka		1,919.24
Clubb, Laura A.,* Tulsa		17,639.37
Central National Bank, Okmulgee		51,827.36
Cole, J. R. Jr., Tulsa		12,062.49
Cline, W. S., trustee,* Newkirk		2,249.24
Canary, J. D., Littleton, Colo.		4,728.79
Continental Oil Co., Tulsa	8,628.82	13,311.62
Continental Oil & Ref. Co., Independence, Kansas		10,216.48
Continental Oil Co., Denver, Colo.	580,054.76	764,097.06
Continental Oil Co.,* Denver, Colo.		98.75
Cameron Ref. Co., Ardmore	42,106.05	52,051.77
Critchlow, W. S., Ardmore		25,247.75
Crockett, Elizabeth R., Okla. City	8,434.30	10,397.30
Crews Estate Oil & Gas Prod., Enid	9,281.08	15,585.04
Crews, L. E., Heirs,* Enid	1,325.87	2,065.20
Crews, Laura E.,* Enid		1,737.12
Cotton Belt Petr. Co., Tulsa	19,049.79	24,212.29
Consolidated Pipe Line Co.,* Sand Springs		2,553.78
Consolidated Pipe Line Co., Sand Springs		68,067.21
Clubb, I. M.,* Kaw	12,852.72	17,583.97
Campbell Oil Co., Tulsa	4,415.07	5,278.45
Creo Oil Co., Tulsa	6,909.25	3,302.80
Caudill, Samuel J.,* Tulsa	3,910.02	5,231.12
Cadijah C. Helmerich,* Tulsa	4,290.26	5,762.33
Conservation Oil Co., Tulsa	34,038.60	43,806.93
Carr, M. L., Okmulgee		2,696.22
Cortez Oil Co. & Alvarado Oil Co., Tulsa	8,705.09	10,064.75
Colonial Royalties Co., Tulsa		6,545.33
Comar Oil Co., St. Louis, Mo.	1,100,902.83	1,519,047.56
Comar Oil Co., St. Louis, Mo.		84,975.94
Commercial Drilling Co.,* Tulsa	8,217.03	10,922.78
Commercial Drilling Co., Tulsa	3,460.55	4,194.96
Central Oil & Gas Co., Tulsa	8,760.62	15,073.57
Central Commercial Oil Co.,* Tulsa	6,711.10	9,137.03
Campbell, Laura P.,* Los Angeles, Calif.		3,381.29
Cruce, V. L.,* Tucson, Arizona		14,422.78
Conyers, Clarissa Diveley,* Covington		2,239.98
Campbell, John A.,* Okla. City		3,784.30
Caudill, Samuel J., Tulsa		5,485.99
Cal-Cul-Oil Co.,* Okmulgee		29,559.07
Cal-Cul-Oil Co., Okmulgee		1,094.84
Critchlow, W. S., Ardmore	36,998.81	49,748.12
Calloway and Rosa Rogers,* Earlsboro		48,720.99
Churchill, W. S.,* Tulsa		4,143.50
Carlock, J. H., Ardmore		5,610.10
Carter, Joe, Wewoka		24,081.03
Cluck, A. V. and L. B.,* Seminole		30,128.54
Campbell, H. D.,* Wewoka		8,427.40
Connelly, G. W., Caney, Kans.		13,096.79
Chapman, Fred A.,* Ardmore		8,006.59
Carpenter, M. E.,* Okla. City	6,268.35	6,646.37
Cox, Edw. B. and Jake L. Hamon,* Ardmore		28,841.16
Caves, Noah J.,* Stroud		2,595.12
Crude Oil Royalties Corp.,* New York, N. Y.		16,784.03
Cudahy Oil Co., Cleveland, Ohio	13,457.92	16,095.65
Cates, Mary C., and Wirt Franklin,* Ardmore	2,919.75	3,256.27
Craig and Andrews, Recrs.,* Chandler		2,298.51
Cox, Anna Elizabeth,* Ardmore		5,306.17
Cline, W. S.,* Newkirk		3,491.68
Cline, W. S.,* Trustee, Newkirk		2,323.80
Carter Oil Co., Tulsa	4,932,228.96	6,435,703.83
Carter Oil Co., Tulsa		283,240.34
Continental Oil Co., Denver Colo.	57,975.20	76,635.49
Chambell, Arthur H.,* Wewoka		3,512.92
Colpitt, C. R., Collinsville		3,266.87
Cowan, S. H. & M. L.,* Pauls Valley		2,101.57
Clark, Dillard H., Jr.,* Ponca		7,121.24
Clark, Ex. Est. of Dillard H. Jr., Ponca		3,560.58
Cromwell Oil & Gas for A. G. Rogers		2,307.38
Cal-Cul Oil Co.,* Okmulgee	1,794.41	2,368.91
Coakley, Chas. A., Rec. for Aztec Oil Co.,		10,344.08
Champlin Ref. Co., Enid	168,136.49	241,741.87
Campbell, J. D.,* Seminole	4,702.25	6,208.09
Case, Margaret,* New York City		2,229.27
Central Union Trust Co.,* N. Y. City		4,810.28
Cumberland Pet. Co., Cleveland, Ohio	12,250.66	15,389.14
Chaney, Ed*, Tonkawa		4,708.52
Denver Prod. & Ref. Co., Okmulgee		209,833.52
Denver Prod. & Ref. Co.,* Okmulgee		1,193.44
Deep Rock Oil and Ref. Co., Tulsa	68,581.57	98,060.98
Schonwald, Dave* Blackwell		3,541.75
Darks, H. H.,* Oklahoma City		2,918.41
Dallas Co., The, Tulsa		5,168.72
Davis, Beatrice, Tulsa	11,244.98	14,125.43
Dillard, V. E.,* Ardmore		6,212.86
Deaner, J. J.,* Okmulgee	6,451.42	8,929.08
Dillard, J. H.,* Ardmore		5,292.05
Dixie Drilling Co., Sapulpa		31,207.00
Davis, B. F. & Mary,* Wewoka	5,949.57	8,036.95
Delk Inv. Corp.,* St. Louis		5,183.54
Dixon, J. D., Duncan		4,164.72
Douglass, M. S.,* Weleetka		2,145.35
Detrick, H. C., Okmulgee	4,115.86	5,276.73
Darby, J. F.,* Muskogee		2,593.94
Darby Pet. Corp., Tulsa	109,793.32	147,447.16
Dover Investment Co.,* Bartlesville	2,281.72	2,985.78

Name and Address—	Barrels	Amount
Davis, L. R., Tulsa	44,618.70	59,563.13
Douglas, O. H.,* Okmulgee		4,419.07
Douglas, H. T.,* Shawnee		10,147.21
Depew, Henry,* New York City		3,128.15
Daisy Bell Petr. Co., Ardmore	7,152.76	8,810.55
Dolman, L. S.,* Ardmore		3,117.69
Doss Royalty Co., Oklahoma City	32,443.21	42,559.35
Doss Royalty Co.,* Oklahoma City	12,283.11	16,555.62
Dixie Oil Co., Inc., Shreveport, La.	351,611.95	456,803.06
Dixie Oil Co., Inc., Shreveport, La.		20,787.67
Devonian Oil Co., Tulsa	103,409.46	146,573.12
Delaware Consolidated Oil Co., Tulsa	25,247.08	29,722.33
Douglas Oil Co., Tulsa		5,577.55
Douglas, H. T.,* Shawnee		13,469.68
Doyle, J. A.,* Wewoka		19,124.31
Delmar Oil Co., Bartlesville	31,588.47	44,397.71
Derdeyn, Hector and Sylvia,* Pauls Valley		2,465.13
Davis, Earl,* Tulsa	3,823.75	5,102.04
Dixon, W. L.,* Duncan	8,612.08	11,009.27
Depew, Henry,* New York City		3,293.25
Davis, Mont R., Seminole	3,143.32	4,083.96
Doneghy, J. C.,* Tulsa		2,721.89
Davis, J. G.,* Trousdale		2,823.00
Davis, L. L.,* Asher		3,403.90
Davis, C. J.,* Asher		3,403.90
Davis, J. G.,* Trousdale		5,846.00
Denney, C. E.,* Alva	2,051.12	2,218.26
Drew, Byron,* Ardmore		1,948.26
Dixon, J. D.,* Duncan	2,923.47	2,538.53
Dilley, W. Y., Trustee,* Waurika	7,473.48	7,936.18
Duff, D. B.,* Cleveland, Ohio		6,074.38
Duncan, Frank and Virginia Duncan et al,* Tulsa		2,563.56
Diamond, Harry H., Oil Co.,* Holdenville		5,572.91
Dings, P. C.,* Chicago, Illinois	2,796.34	3,456.97
Davis, B. F.,* Wewoka		11,359.51
Day, Annie,* Earlsboro	5,567.20	7,340.70
Day, J. F.,* Earlsboro	2,783.60	3,670.47
Duffield, Howard and Berlin, Tulsa		4,897.81
Duncan, U. T., Blackwell		2,934.87
Davis, E. T., Oil Co., Oklahoma City		8,913.83
Eason, T. T.,* Enid	11,889.30	17,555.25
Eason, T. T., Enid	4,766.35	5,969.77
Eastern Royalty Corp.,* New York City		19,272.40
Elm Oil Co.,* Tulsa	2,901.62	3,888.06
Elm Oil Co., Tulsa	12,193.28	15,560.05
Echo Oil Co., Tulsa	5,193.13	6,642.33
Ellis Drilling Co., Wichita Falls	5,406.55	7,296.79
Ellis Drilling Co., Wichita Falls	5,257.71	7,588.97
Evans Bros., Collinsville		8,074.65
Ethelyn Oil & Gas Co., Independence, Kans.		8,329.35
Eldracher, Rudolph, St. Louis, Mo.		5,553.55
Edwards, J. W.,* Seminole		10,482.22
Eagle Picher Lead Co., Henryetta	1,980.50	6,971.35
Endicott, C. C., Est.,* Tonkawa		4,165.18
Empire Oil & Ref. Co., Bartlesville		28,880.04
Empire Oil & Ref. Co., Bartlesville	1,007,509.28	1,324,779.34
Empire Oil & Ref. Co.,* Bartlesville	48,360.73	64,643.21
Empire Oil & Ref. Co., Bartlesville		634.68
Empire O. & R. Co.,* (suspense), Bartlesville	13,179.45	16,310.39
Empire O. & R. Co., (suspense), Bartlesville	49,756.73	68,481.02
Empire O. & R. Co., (suspense), Bartlesville	13,588.18	18,650.55
Empire Oil & Ref. Co.,* Bartlesville	22,701.59	30,245.48
Empire Oil & Ref. Co.,* Bartlesville	12,881.61	17,123.54
Empire Oil & Ref. Co.,* Bartlesville	3,052.62	3,710.88
Empire Oil & Ref. Co.,* Bartlesville	5,025.43	6,618.93
Empire Oil & Ref. Co.,* Bartlesville	15,718.88	20,640.16
Enterprise Transit Co., Titusville, Pa.	3,110.93	3,699.19
Edgwood Oil Co., Tulsa	4,449.27	6,241.22
Edgwood Oil Co., Tulsa	13,498.94	18,840.44
Enfisco Oil Corporation, Tulsa	15,005.04	18,593.53
Endicott, Laura A.,* Los Angeles, Calif.	3,624.34	5,249.73
Endicott, T. H.,* Los Angeles, Calif.	2,918.65	4,120.41
Elliott and Vensel, Tulsa		8,199.44
Enid Bank and Trust Co.,* Enid		15,073.29
Elson, W. H., Tulsa		8,629.56
Emery, Lewis & Sons, Bradford, Pa.	8,997.35	11,487.83
Finch, J. Carl,* Lindsay		2,570.56
Fitzgerald, D. C.,* Ardmore		2,734.77
Fitzgerald, D. C., Trustee, Ardmore	6,938.74	8,646.26
Freeman, Chas. R.,* Checotah	1,475.72	1,905.94
Freeman, Chas. R.,* Checotah	2,224.15	3,091.52
Finance Oil Co., Grounda, N. Y.	16,975.43	22,650.43
Frazier, G. W.,* Kingfisher	27,933.31	38,302.47
Foster, James F.,* Anthony, N. M.		4,669.01
Fennell, J. T.,* Pauls Valley		10,043.35
Farmers State Bank, trustee,* Garber		3,596.68
Fagar Oil & Gas Co., Garber		8,005.68
Flora Oklahoma Oil Co., Cement	4,548.62	5,731.07
Fort Ring Oil & Gas Co., Ft. Worth, Texas		6,906.47
Falkenburg, C. W.,* Wewoka	4,300.33	6,107.66
Flynn, D. T.,* Oklahoma City		2,584.32
Fleet, J. M., Estate,* Ada		15,396.24
Fleet, D. F.,* Ada		15,364.57
Fleet and Osborn,* Ada		2,259.95
Fern Oil & Gas Co., Yale	4,209.50	5,472.76
Fern Oil & Gas Co., Yale	6,064.78	7,756.41

Name and Address—	Barrels	Amount
Franks, W. H.,* Seminole		26,654.11
Fulp, J. A., Receiver, Sapulpa	3,464.11	4,523.18
Flint, Chas. W.,* Tulsa		2,957.09
Frost, C. H.,* Tulsa	1,632.96	2,194.44
First National Bank,* Chickasha		2,201.15
Flynn, Streeter B.,* Oklahoma City		4,051.09
Fannell, K. C.,* Chickasha		2,857.39
Franklin, Wirt,* Ardmore	2,267.49	2,927.43
Foster Oil Co., Tulsa		12,924.77
Fare, J. C.,* Wewoka		4,792.24
Fox Petroleum Co., Ardmore		6,014.59
Fox Royalty Co., Tulsa	21,539.33	25,908.86
Farwell, K. C.,* Chickasha		3,064.85
Fort Cobb Oil Co.,* Tulsa		2,252.18
Fugate, S. M., Gdn.,* Maramec		2,096.68
Foster Petroleum Corp., Bartlesville	127,776.74	166,674.60
Foster Petroleum Corp.,* Bartlesville	21,276.18	28,612.97
Foster and Davis, Inc., Bartlesville	9,423.57	12,076.27
Frederick, A. L.,* San Monica, Calif.		3,193.15
Frederick, Fred.,* San Monica Calif.		5,946.04
Frederick, Geo.,* San Monica, Calif.		3,193.12
Frederick, Mildred A.,* San Monica, Calif.		3,300.67
Flanagan, J. P.,* Tulsa		4,028.45
Flanagan, J. P., Tulsa		6,394.50
Fuhrman Petroleum Co., Okmulgee		60,346.62
Fuhrman Petroleum Co.,* Okmulgee		6,411.00
Franklin, Wirt,* Ardmore	18,172.93	22,052.32
Franklin, Wirt, Ardmore	152,132.73	188,063.17
Gibson, Ed. L.,* Seminole		6,001.00
Grisso, W. E.,* Seminole		12,398.65
Gorton Trust Co., Cement	10,745.80	13,470.92
Garland, R. F. and Co., Tulsa		19,832.71
Garland, R. F., Tulsa, (3 quarters combined in this report)		665,360.52
Grisso, Horner,* Seminole		7,784.62
Grisso, W. E.,* Seminole		89,746.26
Grisso, W. E. and Gypsy Oil Co., escrow, Tulsa	4,347.84	11,452.43
Grisso, W. E.,* Seminole	4,005.78	5,313.11
Gilmer Oil Co., Ardmore	136,194.97	160,986.62
Gillespie, F. A. and Son, Tulsa	24,595.07	29,790.05
Gardner Petroleum Co., Tulsa	23,211.76	31,831.56
Gardner, James H.,* Tulsa	4,082.33	5,485.99
Gibson, A. P.,* Shawnee	1,377.24	2,532.90
Gates Oil Co., Ardmore	10,297.26	12,258.93
Gilliland Oil Co., Tulsa	23,965.52	33,141.08
Gilliland Oil Co.,* Tulsa		279.48
Gregg, C. O., Ardmore	3,547.58	4,412.05
Glidden Oil Corporation, Tulsa	14,063.89	18,216.64
Galvez Oil Corporation, Tulsa	8,661.93	13,033.40
Glass, J. Wood,* Nowata	3,994.46	5,008.16
Goldelline Oil Corporation, Okla. City	28,070.89	39,244.74
Gaume, Sarah E., Wichita, Kansas		2,422.10
Griffin Prod. Co., Tulsa	4,594.13	7,956.76
Gooden, Mary, care of Texas Co.,* Tulsa		3,457.28
Garner, Mabel,* Wewoka		6,736.73
Gled Oil Co., Tulsa	15,097.20	20,258.15
Greis, H. N.,* Tulsa	4,082.33	5,485.99
Gray Oil Co., Tulsa	4,265.99	5,804.02
Glass, M. L.,* Tulsa	1,098.23	2,042.63
Goltry, C. W.,* Enid		1,882.67
Gilcrease Oil Co., Tulsa	19,195.96	25,774.19
Glenny, Ethel,* Blackwell		2,305.02
Garvin Drilling Co., Duncan		17,797.52
Gahagan, Annie,* Wewoka		57,962.95
Garst, Edw., Estate,* Coon Rapids, Iowa	2,080.27	2,917.52
Gilburtson, Otho T. and Violet H., Muskogee		5,355.00
Greer, F. H.,* Tulsa		2,554.54
Greer, F. H., Trustee for Royalties Co.,* Tulsa		43,015.43
Garner Royalty Inc.,* Long Beach, Calif.		6,748.74
Gunn, Frank R.,* Wewoka		2,382.35
Graham, W. A., Est.,* Clarion, Pa.		3,349.89
Graham, Jas. H., Bartlesville	7,905.77	10,281.02
Gillette, J. M.,* Tulsa	1,409.34	1,982.10
Gillett, Geo. M., Jr.,* Baltimore, Md.		2,915.33
Gant, Walter H.* and N. B. Feagin et al,* Duncan		6,658.67
Gant, Walter H., Ardmore	5,196.15	6,461.93
Gant, Walter H., Ardmore		1,558.21
Gant, Walter H. and N. B. Feagin, Ardmore	5,675.46	6,265.94
Feagin, Dolman, Gant and Tyer, Ardmore	4,332.55	5,080.91
Gladys Bell Oil Co., Tulsa	18,447.30	31,829.73
Gypsy Oil Co., Tulsa	2,370,482.54	3,139,816.57
Gypsy Oil Co., Tulsa	380,876.76	495,811.37
Gypsy Oil Co., Tulsa		120,345.61
Gypsy Oil Co., Tulsa		25,831.12
Gypsy Oil Co.,* Tulsa	2,012.30	2,498.46
Gypsy Oil Co., (Commercial), Tulsa	1,082.35	4,219.35
Gypsy Oil Co., (Cumsey lease),* Tulsa	4,334.20	5,735.89
Gilcrease, Thos., Tulsa	3,902.47	4,995.14
Gilcrease, Thos.,* Tulsa		1,631.08
Galt Brown Co., Ardmore	3,816.50	5,166.41
Galt, Edward, Ardmore	2,168.48	2,883.66
Galt, Edw., Ardmore	14,884.11	17,607.56
Gled Oil Co., Tulsa	14,740.36	19,929.32
Greis, H. N.,* Tulsa	2,810.39	3,753.18
Gilbert, N. T., Receiver	4,882.86	6,558.81
E. L. Robinson-Gibson Zahniser Oil Corp., Tulsa	11,986.75	18,281.57

Name and Address—	Barrels	Amount
Robinson, E. L., Tulsa		2,820.69
Gilbert, N. P., (Special), Tulsa	5,877.79	8,868.90
Graham, Chas. A. and Florence, Mountebello, California		2,985.18
Gray Oil Co., Tulsa	3,478.75	4,814.57
Grimes and Gillespie, Tulsa	14,906.40	20,380.63
Galer Oil Co., Tulsa		32,293.06
Grace, John J., Brooklyn, N. Y.		3,183.56
Glass, J. Wood, Admr. Azel Ford est., Nowata		2,166.24
Healdton Petroleum Co., Ardmore		27,075.17
Healdton Oil & Gas Co.,* Enid	4,782.12	6,480.82
Healdton Oil & Gas Co., Enid	23,932.33	35,355.79
Humble Oil & Ref. Co., Houston, Texas	327,634.99	455,114.56
Humble Oil & Ref. Co., Houston, Texas		10,548.04
Hales, W. T., Oklahoma City	65,022.70	84,910.70
Hales, W. T.,* Oklahoma City	1,088.25	1,419.99
Home Gas Co. of Cushing, Cushing	7,112.08	19,800.04
Hull Co., J. A., Tulsa	391,117.82	523,946.66
Hull, J. A. Co.,* Tulsa		656.69
Harber, Claude, Seminole		4,321.54
Harber, Mary,* Seminole		15,301.60
Harber, J. N.,* Seminole	15,934.62	38,804.52
Harber, R. T.,* Seminole		**5,400.00**
Hansen Oil Co., Tulsa	6,489.60	8,367.01
Harris, E. L., Trustee,* Wewoka		26,547.72
Haury, Manahan & Co.,* Enid	1,319.86	2,346.25
Haun, Carl. B., * Blackwell		2,902.38
Hughes, Wm. L.,* Sapulpa		6,926.76
Henry, Marie S., New York City		2,363.75
Hernstadt, N., New York City		4,999.12
Hamon, Jake L., Estate, Ardmore		7,316.42
Hamon, Jake L., Estate,* Ardmore	883.10	1,042.26
Harris & Haun, Ins., Blackwell	8,643.63	38,799.03
Hicks, G. W.,* Cox City, Okla.		9,009.82
Herbert Oil Co., Ft. Worth	5,324.53	7,294.60
Hiawatha Oil & Gas Co., New York City		4,950.07
Horsley, Thos. J., Wewoka		9,130.43
Hill, P. J.,* Shawnee	10,093.91	13,284.81
Hildebrandt, G. W.,* Oklahoma City	1,548.52	2,032.77
Highley, Lois E.,* Oklahoma City		2,131.70
Halsell, E. L. & W. B. Butz,* Muskogee		3,002.72
Hernstadt, S. J. and W. L.,* New York City	1,963.97	2,290.78
Harris, Cecil H. et al,* Shawnee		14,688.99
Haddad, N. George,* Beggs		2,196.82
Homesley, W. G.,* Earlsboro		47,652.61
Hombra Oil Co., St. Louis, Mo.	4,939.73	6,123.62
Hernstadt, S. J., Trustee,* Ardmore	5,186.53	6,226.39
Houston Oil Co. of Texas, Houston, Texas	143,756.55	196,052.42
Howard, O. H., Tulsa	11,330.30	13,288.36
Hughes, Richard,* Tulsa	2,449.35	3,291.55
Hefner Co., Oklahoma City		5,841.00
Hull, J. L.,* Seminole		8,775.20
Hall, Ruth M.,* Holdenville		8,231.70
Hall, J. E.,* Sasakwa		7,066.75
Hall, Joll E.,* Sasakwa		3,127.31
Hall, Ruth M.,* Holdenville		3,774.05
Horton, E. N.,* Ardmore		2,726.43
Hall, Benz. F.,* Las Cruces, N. M.		2,565.21
Hopkins, A. N.,* Davenport	1,699.40	2,612.20
Haber, Chas.,* Anaheim, Calif.		8,240.75
Hardin, J. J.,* Duncan	3,110.12	3,256.89
Hagan, Horace H.,* Tulsa		2,092.44
Hartley, J. C., Agt., Garber		11,973.51
Hammons, S. B.,* Seminole		5,331.41
Hayes, J. S.,* Newkirk		2,261.02
Hughes, T. J., Cushing		14,110.87
Horne, H. M.,* Winfield, Kansas		2,849.75
Hesslein, Max,* New York City		9,001.77
Hamon and Colcord, Ardmore	10,389.99	11,138.82
Hupp, W. E., Lexington, Ky.		10,369.83
Hemlock Oil Co., Tulsa	3,959.30	6,650.60
Hemlock Oil Co.,* Tulsa	1,659.41	2,368.71
Hightower, W. E.,* Oklahoma City	8,340.47	11,841.92
Homaokla Oil Co.,* Oklahoma City	8,957.66	11,840.07
Homaokla Oil Co., Oklahoma City	65,395.77	74,348.02
Home Stake Oil & Gas,* Seminole		153,137.44
Harber, Mary,* Seminole	20,284.00	27,552.83
Harber, J. N.,* Seminole	25,941.47	35,595.90
Hunt, Augustus,* Oklahoma City		5,008.28
Harrison, Lewis Z.,* New York City		5,270.41
Harris, T. D.,* Okmulgee	10,527.53	14,006.32
Halsell, Ewing,* Vinita		2,751.13
Harris, E. L.,* Wewoka		4,502.44
Higgins, W. P.,* Oklahoma City		2,007.91
Hayden, John F.,* Tulsa	1,544.28	2,029.43
Hayden, John F.,* Tulsa		2,378.57
Hardin, J. J.,* Duncan		**2,236.70**
Huddleston, C. T.,* Okemah		**2,170.10**
Hughes, Richard,* Tulsa	1,686.22	2,251.87
Halle, Mollie E.,* Wellington, Kansas		8,246.80
Henry, J. W.,* Tulsa	11,262.07	15,895.03
Hampton, W. H.,* Okmulgee	7,871.48	10,410.68
Hanbury, Harry, Duncan	4,241.86	5,116.87
Hedlund, Mrs. Belle,* Cement		3,826.68
Investors Royalty Co., Inc.,* Tulsa	27,114.03	36,672.66
Interocean Oil Co., Tulsa	72,250.31	93,901.00

Name and Address—	Barrels	Amount
Independent Oil & Gas Co.,* (suspense), Tulsa		2,512.23
Independent Oil & Gas Co., Tulsa	1,043,962.81	1,446,855.86
Independent Oil & Gas Co.,* (suspense), Tulsa	2,613.47	3,460.23
Independent Oil & Gas Co.,* (suspense), Tulsa	4,181.55	5,536.37
Independent Oil & Gas Co.,* (suspense), Tulsa	1,479.18	2,017.40
Independent Oil & Gas Co., (suspense), Tulsa	5,177.00	7,061.00
Inscore, J. D.,* Duncan		5,638.53
Ireland, O. M.,* Sapulpa	9,554.21	15,014.93
Indiana Oil & Gas Co., Tulsa	27,519.64	38,712.99
Indian Royalty Co.,* Okmulgee	19,141.82	25,704.51
Indian Terr. Ill. Oil Co., Bartlesville	134,779.50	184,765.73
Indian Terr. Ill. Oil Co., Bartlesville (prod.)	3,749,594.63	5,230,815.44
Indian Terr. Ill. Oil Co.,* Bartlesville	1,792.19	2,400.79
Imperial Royalties Co.,* Kansas City, Mo.	33,386.67	46,329.50
Interior-Indian Osage Agency,* Pawhuska	1,063,377.23	1,380,476.33
Interior-Indian Osage Agency, Pawhuska		259,930.36
Interstate Oil & Gas Co., Orlando, Fla.		6,440.00
Iowa Oil & Ref. Co., Hawarden, Iowa		10,426.23
Ice, A. B. and L. F.,* Tulsa		15,656.70
Ingram, J. A.,* Shawnee		2,313.20
Ingram, Leonard D.,* Cleveland, Ohio		4,058.96
Iron Mountain Oil Co., Tulsa	19,177.15	24,708.65
Iron Mountain Oil Co.,* Tulsa		1,297.32
Imo Oil & Gas Co., Covington		16,770.72
Ireland, O. M., Sapulpa	8,213.12	11,608.09
Johneda Oil Co., Tulsa	5,159.04	6,642.34
Josey Oil Co., Tulsa	183,111.70	268,401.79
Jones, J. A.,* Tonkawa		2,194.58
Johnson, B. F. & Mary,* Seminole		16,975.66
Jones, Robt. L.,* Bristow	3,631.06	5,757.98
Jenkins, Florence and Mayme Walker,* Wichita, Kansas		9,592.15
Johnston, W. R.,* Shawnee		9,160.21
Jackson, L. B., Sapulpa	3,212.18	6,199.92
Jackson, L. B., Sapulpa	10,132.74	14,312.10
Jackson, L. B.,* Sapulpa		4,987.08
Jackson, Pearl B.,* Sapulpa	1,435.35	1,763.20
Jackson and Morrison, Sapulpa	1,952.14	2,578.71
Jackson-Wise and Markham, Sapulpa	2,890.36	3,534.67
Jackson-Wise and Bovaird, Sapulpa	2,329.22	2,705.73
Jackson and Wise, Sapulpa		3,110.09
Jones, R. C. and Co., Inc., Cushing	10,920.77	16,754.12
Jameson, John B.,* Concord, N. H.		2,638.09
Junction Oil & Gas Co.,* Blackwell	4,877.41	6,421.52
Jordon, R. S., Roosevelt, Utah		1,947.23
Jones, M. W.,* Seminole		2,580.19
Joyes, Watson B.,* Okmulgee	1,816.91	2,436.13
Janes, M. W.,* Seminole		11,607.65
Johnson Oil Ref. Co., Chicago, Illinois		8,407.76
Jones, J. Edw.,* New York City		32,402.54
Johnson, E. H.,* Wellington, Kansas		3,092.19
Jackson, Edmond F., trustee,* Seminole		2,387.66
Jackson, Edmond F. and wife,* Seminole		1,560.83
Kewanee Oil & Gas Co., Titusville, Pa.	365,331.84	504,110.04
Keener Oil & Gas Co., Tulsa	43,102.61	52,844.42
Keener Oil & Gas Co.,* Tulsa	1,683.99	2,323.83
Kingwood Oil Co., Okmulgee	177,832.36	266,497.04
Kingwood Oil Co.,* Okmulgee	1,606.85	2,195.64
Kay and Kiowa Oil Co., Tulsa	14,945.12	19,321.44
Knappenberger, Frank,* Seminole		25,678.59
Kennedy, Emma B., trustee,* Okemah		20,554.85
Kennedy, Gail R.,* Okemah	5,069.97	6,829.49
Kennedy, H. E.,* Okmulgee		2,456.97
Kennedy, S. P.,* Bradford, Pa.	1,967.01	2,577.68
Kennedy, J. H.,* Wetumka		5,249.77
Kennedy, J. H.,* Wetumka		2,103.42
Knupp Oil Co., Warren, Penn.	4,501.24	5,685.19
Keck, L.,* Nacoma, Texas		3,901.95
Keck, I. & L., Nacoma, Texas		3,938.35
Kimmel, J. D.,* Tulsa		4,033.58
Knotts, Sarah J.,* Stillwater	7,603.99	12,007.78
Krumrei and Combs, Bristow		7,039.13
Ketch, Frank L.,* Oklahoma City	2,666.88	3,185.39
Kinkade, A. J.,* Shawnee		39,653.80
Kelly, Albert,* Bristow		3,303.84
Kinney, Geo., trustee,* Tulsa	5,995.48	7,928.60
Killgore, W. C.,* Springdale, Arkansas		3,067.63
King, Helen Walker, gdn.,* Orange, Calif.		9,370.53
King, Helen Walker,* Orange, Calif.		31,092.42
Killingsworth, Mary Ella,* Seminole	34,472.46	46,325.45
Killingsworth, Mary Ella, (suspense), Seminole	14,514.81	19,505.56
Kiper, Vernon L.,* Wewoka	2,556.64	3,417.10
Klein, Chas., trustee,* Tulsa	7,371.64	7,804.78
Kimble, C. C., Beggs		7,608.09
Kessler Oil Co., Okmulgee		5,652.83
Kanola Corporation, Okmulgee		7,484.66
Keifer, Ben,* Sapulpa		7,566.84
Kahle, Clyde,* Cyril		6,011.43
Knight, R. F.,* Shawnee		3,516.22
King, Tom,* Okmulgee		2,270.98
Keys, R.,* Okemah		2,247.62
Knox Petr. Co., Ardmore	22,140.41	29,376.43
Kunkel, John C., Jr.,* Tulsa		1,942.06
KeyOkla. Oil Co.,* Oklahoma City		2,071.00
Key, W. S.,* Oklahoma City		6,606.75
Killingsworth, Mary Etta,* Seminole	23,731.74	31,692.96
Killingsworth, Mary Etta,* (suspense), Seminole	9,992.38	13,344.25
Kregre, M. G.,* Tonkawa		2,246.67
Knox, Chas. E., Enid		14,810.58
Knox., Chas. E., Oil Co., Enid		2,054.03
Kay Oil Co., Blackwell	5,885.74	14,211.39
King, Hugh, Jr.,* Tulsa	4,578.66	5,427.46
Kirkland, John L. & Son, Tulsa	4,485.97	5,392.23
Kistler Pet. Co., Tulsa		3,403.19
Kistler Pet. Co.,* Tulsa	47,260.23	62,770.15
LeFlore County Gas & Elec. Co., Poteau		12,612.45
Lawton Corporation, Oklahoma City	1,559.55	4,883.17
Little Fay Oil Co., Tulsa	5,135.44	6,551.06
Little Fay Oil Co., Tulsa		167,008.00
Laurel Oil & Gas Co., Tulsa	42,062.44	53,500.11
Landon, A. M., Independence, Kansas		10,466.27
Lewis, A. W. (Wade),* Ollie, Mont.		6,260.96
Laughlin, W. T.,* Oklahoma City		6,259.55
Lindsay, John T., Tulsa		5,456.45
Longacre, C. C.,* Shawnee		7,043.20
Lebow, C. H.,* Tulsa	8,260.39	10,878.11
Lebow, C. H., Tulsa	2,065.99	2,783.64
Lytal, Henry,* Oklahoma City		3,400.39
Lewis, A. W.,* Ollie, Mont.	6,243.96	8,903.64
Link Oil Co., Tulsa	13,962.41	18,572.35
Lohman, John,* Altus		7,072.49
LaForce and Ferguson,* Lemon, Colo.		3,842.72
Livermore, W. H., Inc.,* Chickasha		2,773.20
Longmire, W. M.,* Oklahoma City		1,903.90
Lowson, E. B., Nowata	5,538.10	6,759.27
Lackey, W. G., Co.,* Tulsa		2,028.22
Little Nick Oil Co., Chicasha		10,698.66
Laselle, T. E., Ada	15,970.11	20,400.51
Lone Star Gas Co., Dallas, Texas	16,679.21	25,341.06
La. Oil Ref. Corp., Shreveport, La.		49,531.00
Lindley, Florence,* Sapulpa		3,979.85
Lackey, Bert,* Oklahoma City		2,058.96
Large Oil Co., Bartlesville	4,457.49	5,897.96
Little Ed Oil Co., Tulsa	6,050.25	7,675.28
Longworth, Dr. A. W.,* Scarsdale, N. Y.		3,400.31
Laughlin, Nancy J., Cushing		4,672.95
Lyons Petr. Co., Denver, Colo.	23,478.01	38,515.94
Lock, B. D.,* Wewoka		8,537.07
Lacy, O. L.,* Sulphur		5,326.93
Mid-Continent Pet. Corp., Tulsa	2,147,873.98	2,870,108.99
Mid-Continent Petr. Corp., Tulsa		117,093.56
Malernee Oil Co., Oklahoma City	11,275.57	15,099.29
Minshall, E. R., Tulsa	8,511.76	11,441.21
McMan Oil & Gas Co., Tulsa	80,294.53	108,169.34
McMan Oil & Gas Co.,* Tulsa	633.64	846.20
McCulloch Oil Co., Okmulgee	147,456.38	217,825.45
Minnehoma Oil & Gas Co., Tulsa	333,765.46	472,236.35
Mul-Berry Oil Co., Cushing	35,924.09	68,738.11
Moran-Jackson and Roome, Tulsa	17,534.29	22,204.32
Mohan Oil Co., Tulsa	6,363.20	9,648.33
Marileen Oil & Gas Co., Blackwell	9,583.25	13,007.37
Mullendore, E.,* Cleveland		10,834.00
Mullendore, E., Cleveland		8,513.19
Mullendore, E., Trustee, Cleveland		118,172.17
Mullendore, Sarah J.,* Cleveland		1,995.48
Chambers, O. L.,* Tonkawa		19,750.79
Mountain Fork Oil Co., Okmulgee		13,221.26
McDonough, W. W.,* Wewoka		32,582.86
McMan, C. L., Inc.,* Tulsa	3,772.01	4,900.73
McQueen, I. R., Oklahoma City	4,005.33	5,413.64
McQueen, I. R.,* Oklahoma City	10,093.24	13,548.95
McQueen, I. R., Oklahoma City		7,142.45
Moore, E. H.,* Tulsa	3,232.85	4,821.47
Meier, Albert and Hulda,* Enid		2,971.26
Meier, John and Rosa,* Winfield, Kans.		2,971.26
Moseley, C. F., Bartlesville		5,524.35
Myers, Alice Clark,* Santa Fe, N. M.		7,288.33
McVey, W. H.,* Tulsa		2,490.28
Mid-Cont. Royalty Corp.,* Tulsa	1,772.27	2,335.84
Miller Bros. & Co., New York City		2,895.92
McAlester, Mary B.,* Oklahoma City		7,500.57
McDougal, W. A.,* Sapulpa	1,912.44	2,763.93
Martindale, E. B.,* Muskogee		2,574.28
Meyer, Annie,* Sapulpa		7,279.66
Miller, Lizzie,* Okmulgee		2,019.09
McCord, Wm. F.,* Tarrytown, N. Y., care of 502 First Natl. Bank, Tulsa	1,414.22	2,257.92
Miller Bros. and Co., New York City		2,113.30
Mull, O. H.,* Geary		3,499.30
Sparks, Harriett W.,* Earlsboro	24,298.00	29,130.20
Monroe, J. E.,* Tulsa	1,770.84	2,469.60
Moore, Genevieve E., Tulsa	3,101.27	4,919.09
Moore, Genevieve E.,* Tulsa		234.24
McRoberts Royalty Co., Oklahoma City		5,485.99
McCully, E. G. & C.,* Hennessy		9,474.82
Mayhue, Geo. M.,* Ada		70,009.10
Malone, J. M.,* Seminole		4,657.02
Mason, H.,* Seminole		4,657.02
Mainard, M. F., Jr.,* Wewoka	3,704.34	4,827.81
McDonough, Berd L.,* Wewoka		1,994.84
Murphy, Frank H.,* Tulsa	3,191.70	4,211.16
McCrary, E. W.,* Tulsa	2,044.54	2,404.82
Mudge Oil Co., Pittsburgh, Pa.	19,463.96	20,437.12

Name and Address—	Barrels	Amount
McMechan, W. F.,* Tulsa		2,582.92
McIntosh, W. C.,* Okemah		1,970.93
Morton, Walter W.,* Okmulgee		2,216.54
McClure, Carrie L.,* McAlester		7,500.57
McKee, S. H.,* Tonkawa		6,359.70
Mussellem, Sophia S.,* Muskogee	3,284.73	4,026.23
Mayes, E. L.,* Earlsboro		20,938.45
Merrick, F. W., & R. W. Coe, trustee, Ardmore	17,730.05	21,903.48
Murphy, J. F., Sapulpa		16,158.16
McNamara, T. J.,* Seminole		14,187.23
Miller, Bluford W.,* Okmulgee		90,473.82
Martin, Villard,* Tulsa		1,255.98
Mehler, A. J.,* New York City		2,377.20
Metcalf, R. J.,* Ft. Worth, Texas	7,099.96	9,732.09
Midland Security Co., Tulsa	5,321.63	6,724.03
Meyer, Henry Von L.,* New York City		2,357.30
Moore, J. Read.,* Wewoka		3,140.39
Moore, J. Read,* Wewoka		3,843.38
Million and Thomas,* McAlester	4,365.23	4,785.58
Maxey, J. H.,* Oklahoma City		6,735.62
McCafferty, E.,* Tonkawa		2,171.57
Marland Oil Co., Ponca	917,121.93	1,263,262.27
Marland Oil Co., Ponca		80,263.56
Mid-Kansas Oil & Gas Co., Findlay, Ohio	231,495.63	316,196.35
Mountain State Oil Co., Bartlesville	23,699.47	30,391.19
Merrick, Ward S., Ardmore		6,092.12
Merrick, F. W., Inc., Ardmore		42,351.12
McNamara, T. J., et al,* Seminole		7,043.66
Margay Oil Corp., Tulsa	546,558.32	727,011.78
Misener, F. D., Tulsa	8,042.74	15,698.17
Moore, Dudley W.,* trustee, Tulsa		1,938.25
Mashburn, Winifield G.,* Ardmore	1,935.32	2,333.37
Mahoney, Sarah J.,* Tonkawa		5,448.89
MacDonald, Henry,* New York City		9,731.81
Morgan, Dudley D.,* Tulsa		2,301.66
Magnolia Pet. Co., Dallas, Texas	3,758,075.71	4,467,007.22
Magnolia Pet. Co., Dallas, Texas		144,022.16
Magnolia Pet. Co.,* (suspense), Dallas, Texas	77,337.88	97,048.36
Magnolia Pet. Co.,* (suspense), Dallas, Texas	4,209.00	5,133.36
Magnolia Pet. Co., Dallas, Texas	3,895.92	4,739.97
Magnolia Pet. Co.,* Dallas, Texas	14,683.86	17,824.00
Magnolia Pet. Co.,* (suspense), Dallas, Texas		9,494.77
Magnolia Pet. Co.,* Dallas, Texas		1,393.91
Magnolia Pet. Co., (Pd. under protest), Dallas, Texas	3,686.82	4,033.56
Magnolia Pet. Co., (Pd. under protest), Dallas, Texas	52,787.82	66,463.33
Marland Employees Royalty Co.,* Ponca		63,995.04
Merkley, W. A.,* Brooklyn, N. Y.		3,151.01
McRoberts Royalty Co.,* Oklahoma City	2,810.38	3,753.18
McBride, W. C., St. Louis		4,887.04
McBride, W. C.,* St. Louis, Mo.		2,791.18
Mid-West Gas Co., Tulsa		8,120.19
McDaniel, W. F.,* Blackwell		2,511.41
Melton, B. F.,* Duncan		6,168.11
Mason, D. B., Tulsa		23,534.53
Moran, John J.,* Boston, Mass.	6,270.63	8,161.74
MacDonough, J. M.,* New York City		12,710.17
Monarch Royalty Corp.,* Kansas City, Mo.		27,349.58
Moore, Clint, Estate, Tulsa		21,472.28
Mid-Continent Royalty Corp.,* Tulsa	1,478.77	1,960.64
Midco Oil Corp., Tulsa	19,883.73	26,100.97
McMahan, C. L., Inc., Tulsa	35,458.85	47,989.60
McMahan, C. L., Inc.,* Tulsa	28,939.38	38,591.64
Miller, Bluford W.,* Tulsa	6,995.07	9,461.94
Noble Oil & Gas Co., Tulsa	3,515.10	4,809.55
Newby, Errett R.,* Oklahoma City		2,578.48
New England Oil & Pipe Line Co., Boston, Mass.	126,660.30	167,063.34
Noble, Eva E.,* Ardmore	4,245.18	5,330.49
North Counties Gas Co., Ponca City		21,885.90
Noble, Hattie E., Ardmore	3,183.86	3,996.86
Norwood Oil Co., Tulsa	8,808.68	10,844.40
National Union Oil & Gas Co., Blackwell		9,221.55
National Union Oil & Gas Co.,* Blackwell		467.93
National Oil & Dev. Co., Tulsa	7,671.45	9,117.33
Norris, W. C., Tulsa		15,391.90
Nowata Oil & Ref. Co., Tulsa		13,326.61
New Royalty Co.,* Ponca City	2,280.09	3,693.65
Nelson, R. L.,* Webb City, Mo.		5,260.07
Nelson, F. M., New York City	7,180.76	8,769.33
Norvell, A. S.,* Wewoka		6,454.68
Neustadt, Walter, Ardmore		6,753.55
Nester Oil Co.,* Alex	5,349.06	7,352.57
National Refining Co., Cleveland, Ohio	1,236.19	5,383.73
Norton, W. A.,* Amoret, Mo.	2,913.16	4,151.99
North, R. B.,* Blackwell		7,901.98
Noble, Chas. F., Tulsa		14,880.47
Nowata Oil & Ref. Co., Tulsa		13,347.24
Osage Development Co., Bartlesville	5,583.36	6,898.99
O'Dell, Ollie B.,* Richmond, Calif.	11,740.37	15,595.31
Oklavania Oil Co., Tulsa	25,818.88	32,151.11
Omega Oil Corp.,* Shreveport, La.	9,985.74	9,774.89
Oil State Pet. Co.,* Enid	12,126.27	16,419.25
Oil State Pet. Co., Enid	9,320.96	13,682.06
Owl Oil Co., Loco	5,807.56	6,097.93
Ohio Fuel Oil Co.,* Charleston, W. Va.	24,394.33	31,084.81
Ohio Royalty Co.,* Tulsa		10,120.47
Orwig, S. S.,* Wewoka		40,299.27
Olean Pet. Co., Bristow		18,357.75
Osborn, W. B.,* Ada		8,233.17
Osage Gas Producing Co., Independence, Kan.	305.46	77,944.73
Osage Syndicate Inc., Tulsa	5,287.88	6,806.01
Ona Oil Co., Blackwell	11,644.20	28,289.79
Okla. Natural Gas Corp., Tulsa		39,245.36
Owen, Mary Severs,* Muskogee		3,918.58
Oneal, J. M.,* Tecumseh	1,332.31	2,006.69
Oglesby, Robt., Tulsa		5,796.02
Oglesby, Robt.,* Tulsa		4,491.43
Ohio Mid Cities Corp.,* Wichita Falls		2,210.45
Owens, O. O., Tulsa		8,743.03
Owens, O. O.,* Tulsa		10,668.34
Owens, O. O., Tulsa		885.32
Osage Development Co., Bartlesville	5,583.36	6,898.99
Okmulgee Oil & Gas Co., Beggs		5,597.15
Producers & Refiners Corp., Denver, Colo.	79,287.47	105,336.95
Producers & Refiners Corp., Denver Colo.		7,417.18
Pioneer Pet. Co., Tulsa	16,941.14	20,530.43
Peters Pet. Corp., Tulsa	59,940.37	105,135.72
Phillips and Milam, Chelsea	23,558.02	29,535.48
Pearson, Dobson,* Cushing		12,750.00
Pharoah, O. J.,* Henryetta		8,223.77
Parks, J. C.,* Tulsa		2,504.62
Pierson, H. A.,* Shawnee		3,877.31
Perry, C. J.,* Shawnee	5,620.66	3,333.20
Penmar Oil & Gas, Okmulgee		6,416.58
Palmer, S. T.,* Okemah		8,385.15
Peddycoart, B. R.,* Duncan		4,085.26
Producers Oil Co., Tulsa	8,383.94	10,373.49
Prairie Oil & Gas Co., Independence, Kans.		144,453.99
Prairie Oil & Gas Co., Independence, Kans.	4,264,218.43	5,672,603.86
Prairie Oil & Gas Co., Independence, Kans.		50,576.69
Prairie Oil & Gas Co., (trust), Independence, Kansas	2,953.81	3,674.32
Pure Oil Co., Chicago, Ill.	2,843,753.18	3,802,091.03
Pure Oil Co., Chicago, Ill.	2,934.92	3,758.80
Pure Oil Co., Chicago, Ill.		29,803.45
Pure Oil Co., Chicago, Ill.		50,888.61
Pauline Oil & Gas Co., Oklahoma City	17,791.19	23,231.70
Paraffine Oil Co., Houston, Texas	9,189.76	11,106.36
Pawnee Oil Production Co., Tulsa		6,034.89
Pawnee Oil Production Co., Tulsa	4,123.04	9,714.02
Pawhuska Oil & Gas Co., Bartlesville		6,166.88
Pontiac Oil Co., Sapulpa		9,549.50
Pontiac Oil Co., Sapulpa		45,616.15
Priboth, Lillian M.,* Blackwell		2,278.10
Priboth, F. F.,* Blackwell		2,272.02
Potts, Mable Dale,* Yale		4,788.76
Pharoah, O. J.,* Henryetta		5,790.52
Poe, L. M., Tulsa	6,726.69	9,363.18
Price, N. J. & Alpha,* Okemah		5,552.43
P. & H. Co.,* Oklahoma City	2,654.22	3,335.93
Price, M. T.,* Ardmore		2,785.70
Pitman, Lucinda,* Muskogee		1,915.20
Proffitt, J. R.,* Shawnee		2,096.42
Philmack Co., Tulsa	142,156.50	195,735.11
Philmack Co.,* Tulsa	3,839.82	5,313.60
Plymouth Pet. Co., Tulsa	4,806.94	6,150.75
Plymouth Pet. Co., et al, Tulsa	6,194.77	8,186.25
Petroleum Investment Co., Ft. Worth, Texas	5,685.14	5,969.40
Panos, Demetrie,* Seminole		2,722.91
Parker, Ed.,* Wewoka	3,603.59	4,707.51
Page, Chas., trustee, Tulsa	4,729.78	6,449.99
Pugh, W. M., Marlow	17,058.66	21,147.06
Price, F. D. and Arizona Price, Okemah		4,087.32
Parks, J. R.,* Muskogee		1,828.49
Plover Drilling Co., Tulsa	8,412.55	12,303.74
Perry, C. J.,* Shawnee	8,164.48	10,971.76
Poland, R. P.,* Ardmore	2,204.62	2,639.42
Plains Pet. Co., Inc., Tulsa	29,395.71	39,449.48
Pounder, H. C., Tulsa	4,476.36	5,756.96
Pine, W. B., Okmulgee	44,326.12	73,746.51
Pine, W. B.,* Okmulgee		251.24
Pennok Oil Corporation, Tulsa	37,049.39	52,492.71
Perpetual Royalty Income Co.,* Rock Island, Illinois	1,752.73	2,840.83
Pierce Pet. Corp., Sand Springs	7,771.45	8,834.12
Pierce Pet. Corp., Sand Springs	29,825.90	37,952.56
Pierce Pet. Corp., Sand Springs		2,590.37
Pierce Pet. Corp., Sand Springs		3,961.77
Pierce Pet. Corp., Sand Springs	4,699.82	6,015.77
Peerless Oil & Gas Co.,* Indiana, Penn.	22,292.31	30,056.46
Papoose Oil Co., Tulsa	22,824.72	34,267.94
Papoose Oil Co., Tulsa	9,225.30	14,697.96
Provident Royalties Corp.,* Tulsa		39,997.65
Patridge, O. A., receiver,* Dewey	1,861.11	2,237.44
Phillips Lenora C.,* Bartlesville	1,494.34	2,000.72
Phillips Petroleum Co., Bartlesville		98,562.15
Phillips Petroleum Co., Bartlesville	1,088,715.65	1,419,197.77
Quinlan, C. P., Tulsa	6,327.51	7,981.75
Quinton Relief Oil & Gas Co., Quinton		8,546.33
Quimby, John,* Montebello, Calif.		13,312.57

Name and Address—	Barrels	Amount
Roxana Petroleum Corp., St. Louis, Mo.		49,801.19
Roxana Petroleum Corp., St. Louis, Mo.	1,629,110.94	2,126,312.39
Roxana Pet. Corp., for Harber "A", St. Louis		4,066.16
Roxana Pet. Corp., for G. W. Hearn, St. Louis		2,728.01
Roxana Pet. Corp., for R. B. Moss,* St. Louis		2,259.55
Roxana Pet. Corp., for T. J. Spencer,* St. Louis		11,095.24
Roxana Pet. Corp., for Strothers, (suspense). St. Louis, Mo.		48,893.58
Youngblood lease, Seminole		4,030.42
Replogle and Johnston, Oklahoma City		6,388.31
Replogle, D.,* Oklahoma City		10,524.89
Replogle, Jamie,* Oklahoma City		1,662.75
Rigdon and Bruen, Kansas City, Mo.		5,408.00
Reliance Oil Co., Houston, Texas	3,943.83	4,769.65
Reliance Oil Co., Houston, Texas	4,908.67	8,537.38
Rickey, L. D.,* Ardmore	2,995.45	3,654.41
Roth, C. E., Independence, Kansas	4,614.41	5,857.71
Ritts, Leonard C., Tulsa	3,215.02	4,481.59
Regal Oil & Gas Co., Tulsa	7,139.00	9,312.05
Rockland Oil Co., Ardmore	32,914.09	37,593.74
Ringling, Mabel,* Ardmore	2,765.42	3,240.41
Randall, W. S., Oklahoma City	10,734.16	11,473.70
Ramsey, Dock,* Ripley		2,716.62
Ramsey, Dock,* Ripley		6,938.59
Rogers, A. G.,* (suspense), Msukogee	1,865.47	2,577.53
Ryan Consolidated Pet. Corp., Bartlesville	8,499.70	11,372.23
Roberts, C. M.,* Okmulgee	2,987.87	6,666.66
Roberts, C. M.,* Okmulgee		7,880.00
Rebold, John H., Oil Co.,* Okmulgee		10,487.86
Rust, August-Oppenheim,* New York City		46,972.23
Ruppert, Jacob,* New York City		3,374.57
Rogers, A. G.,* Muskogee		4,293.18
Ryan, Mrs. F. B.,* Muskogee		1,905.90
Reed, Frank,* Seminole		2,479.21
Russell, Dora C.,* Duncan		4,339.21
Reed and Harmon, Nowata	5,818.94	7,240.49
Harmon & Glass, Nowata	11,142.59	14,038.70
Harmon, Robertson and Glass, Nowata	3,731.72	4,754.09
Recks, J. R.,* Tonkawa		3,965.00
Robins, J. W., Ft. Worth, Texas	6,927.57	8,048.54
Rainey, Robt. M.,* Oklahoma City		4,509.85
Richardson, Clifton L.,* Tulsa		6,003.62
Roy Oil Co.,* Alex	4,345.76	5,382.10
Roberts, Thos. C.,* Ardmore	9,210.74	12,560.55
Roberts, Thos. C.,* Ardmore		2,150.64
Reed, Isabella S.,* Neosho, Mo.	109,149.48	147,559.76
Reed, Frank H.,* Neosho, Mo.	109,149.48	147,559.76
Reed, Frank H.,* Neosho, Mo.		2,950.07
Ramsey Oil Co., Caney, Kansas	2,338.81	4,767.33
Ralph, B. B.,* Kansas City, Mo.	4,898.74	6,583.11
Ryan, Thos.,* Flanagan, Ill.		12,521.32
Rena Royalty Co.,* Tulsa	11,987.43	16,548.87
Riverland Co., Tulsa	183,571.81	259,697.70
Riverland Co.,* Tulsa	6,051.75	7,938.37
Riddle, H. T.,* Seminole		3,089.17
Royalty Investment Synd.,* New York City		14,714.79
Ryan, Thos.,* Wetumka		11,346.95
Ralph, B. B.,* Kansas City, Mo.		5,280.37
Ramsey, W. R. and W. E., Oklahoma City		47,589.86
Ralph, B. B.,* Kansas City, Mo.		14,550.72
Robinson, J. R.,* Tulsa	4,254.14	5,676.02
Ranola Oil Co.,* Enid		3,304.51
Ross and Greiss, Tulsa		6,706.35
Red Banks Oil Co., Tulsa		23,298.24
Roberts, Geo. D., Tulsa	7,053.35	9,354.77
Shutzer Bros., Dewey	5,179.14	6,038.98
Elliott and Smith, Tulsa	11,389.97	15,698.78
Simpson, A. O.,* Ardmore	5,772.62	7,085.71
Simpson Fell Oil Co., Ardmore	38,937.94	47,899.13
J. R. Simpson, Exec., Seminole		35,627.09
Sheridan Oil Co., Tulsa	16,525.97	21,956.84
Smith, G. J.,* Tulsa	9,477.80	12,819.18
Sneed Royalty Co.,* Tulsa		3,463.18
Splane, Howard S.,* Tulsa		11,478.08
Sarasota Oil Co.,* Ardmore	4,692.16	5,284.91
San Bois Gas Co., Quinton		10,725.00
Smith, Earl,* Blackwell		2,305.02
Smith, Steve,* Blackwell		2,305.02
Smith, Leona,* Blackwell		2,305.02
Shade, R. S., Tulsa	54,453.82	73,250.34
Sparks, L. O., Admr.,* Oklahoma City		44,529.45
Snyder, Chas. A.,* Sapulpa		2,731.14
Sharum, R. E., et al, Ripley		6,917.67
Sharum, Marie A.,* Ripley		4,000.70
Stone, M. R., trustee,* Hawarden, Iowa	3,954.49	4,170.90
Skelton-Moore Oil Co., Bartlesville	6,671.07	8,377.37
Sukovaty, Peter,* Bristow		2,176.76
Scott, Lucy B.,* Wewoka		2,935.35
Stekoll, Harry, Tulsa		5,554.14
Somerville Oil and Gas Co., Muskogee		4,898.03
Speltzer, Quinton, Co., Quinton		9,497.74
Stout, X. K., Tulsa	13,866.63	17,496.12
Sheldon Houston Oil Company, Tulsa	70,620.67	102,282.34
Sturgeon, L. L.,* Wewoka		5,207.66
Stevens, Geo. D.,* Corsicana, Texas	1,196.08	2,125.78
Stacy, J. L.,* Chickasha		1,912.22
Smith, N. Bert,* Oklahoma City		20,316.90
Sartin, John W. and Kate,* Wewoka		7,781.48
Sowards, Fred and Willard,* Stroud		4,344.91
Shimp, Ira,* Dilworth		7,459.42
Surber, O. B., Chickasha		3,023.54
Stacy-Burress & Vaughn,* Oklahoma City		4,964.08
Stanley, Irene,* Norman		3,786.54
Sturgeon, L. L.,* Wewoka		2,736.37
Staley, Wood,* El Paso, Texas		15,711.66
Skelton, L. S., Estate of, Okmulgee	2,104.26	7,202.40
Steil, M. F.,* Tulsa		2,616.15
Shaffer, C. B., Chicago, Illinois	10,380.16	12,482.29
Sanders, Bessie,* Tecumseh		2,823.00
Sanders, Gertrude,* Asher		2,323.00
Simon, Mrs. Bettie,* Oklahoma City		2,168.07
Simms Oil Co., Dallas, Texas	22,365.14	32,683.76
Skelly Oil Co., Tulsa	974,835.30	1,262,389.05
Skelly Oil Co.,* Tulsa	2,597.18	4,366.36
Smith, N. Bert,* Oklahoma City		16,110.34
Smith, Will H., trustee,* Ardmore	1,650.88	1,958.15
Smith, Will H., trustee, Ardmore	31,440.54	42,769.57
Summers, Mrs. Geo. M.,* Tonkawa		3,191.51
Seay, O. W.,* Ryan		14,630.03
Sure Oil Corporation, Tulsa	4,549.44	6,231.79
Superior Oil Corporation, Tulsa	122,708.37	168,741.62
Steinpfad, R. A. and wife,* Shawnee		20,856.43
Simmons, G. A., Okmulgee		13,340.08
Smith, M. T. and Son, Oklahoma City	9,758.34	10,430.65
Shannon, L. O.,* Stillwater		2,852.46
Sevenson, Mary and Gus,* Arkansas City, Kan.		2,536.58
Seay, Clyde W. D.,* Oscar Okla.	2,140.00	2,662.36
Sykes, C. E.,* Ardmore		3,385.99
Thompson, S. F., Okemah		5,828.73
Sharp, Robt. C., Tulsa	9,512.15	12,667.82
Sharp, Robt. C.,* Tulsa	1,729.25	2,405.93
Starport Corporation,* New York City		4,351.72
Sapulpa Refining Co., Denver, Colo.	24,186.70	33,451.10
Shufflin, M. B., Coffeyville, Kans.		5,184.59
Shaffer, J. K. D.,* Oklahoma City	2,643.80	3,837.49
Skelly Oil Co., Tulsa		42,896.32
Skelly Oil Co., Tulsa		3,296.19
Sun Royalty Co.,* Tulsa	22,130.28	29,219.37
Sun Royalty Co., Tulsa	27,874.95	40,316.94
Sun Royalty Co.,* Tulsa		160.33
Sinclair Oil & Gas Co., Tulsa	2,712,226.24	3,694,142.76
Sinclair Oil & Gas Co., Tulsa		89,748.54
Sunrise Oil Corporation,* Oklahoma City		6,396.72
Slick, Tom, Inc., Oklahoma City	401,546.05	556,664.71
Slick, Tom, Inc.,* Oklahoma City	47,441.18	63,603.48
Slick, T. B., Clarion, Penn.	285,499.86	409,793.83
Slick, T. B.,* Clarion, Penn.	23,159.65	33,878.23
Schermerhorn Young Co., Minneapolis, Minn.		2,867.39
Schermerhorn Ardmore Co., Minneapolis, Minn.	64,627.45	77,566.88
Schermerhorn, J. B., Inc., Minneapolis, Minn.	87,960.96	108,713.14
Schermerhorn, J. B., Inc.,* Minneapolis, Minn.	3,062.30	3,816.80
Schermerhorn Oil Co., Tulsa	4,708.61	8,504.84
Schroeder, Herbert,* Enid		2,971.26
Schroeder, Paul,* Enid		2,971.26
Schroeder, Caroline,* Enid		2,971.26
Schumacher, Amanda,* Orange, Calif.		2,971.26
Schroeder, M. A.,* Enid		2,971.26
Schroeder, Walter,* Enid		2,971.26
Schroeder, Oscar,* Enid		2,971.26
Schroeder, Henry,* Enid		2,971.26
Strough, Alice,* Davenport		4,020.07
Smith, John,* Wetumka	1,872.59	2,541.97
Sukovaty, Anna,* Bristow		2,176.76
Sheldon Oil Co., Tulsa	5,465.23	9,653.89
Sidwell Drilling Co., Sapulpa		11,454.62
Sidwell Drilling Co., Sapulpa	7,879.23	7,338.75
Sidwell Drilling Co.,* Sapulpa		569.74
Sterling Oil & Gas Co., Abilene, Texas		19,875.90
South Bend Oil Co., Tulsa		17,979.63
Skelly, W. G., Tulsa	5,855.48	6,873.08
S. W. Producing Co., Bristow		13,851.13
Snowden McSweeney Co., New York City	18,093.46	21,284.83
Simpson, W. E.,* St. Louis	5,772.62	7,085.71
Sheets, I. L., Dustin		7,370.83
Sowards, Fred and Willard,* Stroud		3,206.31
Shirley, Gracie I.,* Tulsa		3,135.94
Seminole Oil Co.,* Tulsa		29,141.35
Selby Oil & Gas Co.,* Tulsa		3,507.35
Selby Oil & Gas Co., Tulsa	41,876.86	49,000.59
Stockdell, Theodore,* Oklahoma City		4,711.14
Swindler, J. A., & Son, Muskogee	10,702.76	13,250.82
Sandford, Edwin, Oklahoma City		1,962.00
Sinclair, H. F.,* New York City		10,621.97
Silurion Oil Co., St. Louis, Mo.		95,943.47
Simons, I. D., Tulsa		9,000.19
Spongy, H. J.,* Trousdale		3,515.63
Savoy Oil Co., Tulsa		25,330.96
Sewell, Thos. and Lizzie,* Sapulpa		2,248.83
Tams, J. Frederick,* New York City		3,245.12
Thompson, Roy B.,* Tulsa		6,937.88
Thompson, W. M., Tulsa		6,999.92
Taliaferro, Nora,* Duncan		2,883.90
Templeton, M. E.,* Phoenix, Ariz.		38,954.05
Tibbens, C. G., Tulsa		53,733.74
Tull, Vida M.,* Yale	7,376.10	9,965.10

Name and Address—	Barrels	Amount
Turner, C. F.,* Shawnee		6,555.43
Thornton, David P.,* Muskogee		2,944.99
Tucker. F. E.,* Ardmore	2,140.51	2,710.83
Transcontinental Oil Co., Tulsa	124,565.17	169,781.19
Tidal Osage Oil Co., Tulsa		38,828.35
Tidal Osage Oil Co., Tulsa		21,757.05
Tidal Osage Oil Co., Tulsa	670,288.80	883,736.30
Thompson and Black, Inc., Tulsa	5,698.67	19,763.53
Todd, R. H., Wewoka		5,729.66
Twin State Oil Co.,* Tulsa	6,595.25	8,882.87
Twin State Oil Co., Tulsa	837,703.09	977,314.46
Talbott, Hudson.* Okmulgee		2,875.39
Texas Co., Producing Dept., Tulsa	2,175,210.97	2,891,069.21
Texas Co., Producing Dept.,* Tulsa	20,870.89	29,427.53
Texas Co., Producing Dept., Tulsa		87,132.68
Texas Pacific Coal & Oil Co., Thurber, Texas	56,294.99	63,680.21
Tiger Mountain Oil Co., Tulsa	3,914.31	7,880.57
Tiger Pet. Corp., Tulsa	6,933.35	9,051.52
Thomas, A. M.,* Tonkawa		6,888.66
Toney, Thos. E.,* St. Louis, Mo.		2,370.76
Templeton, M. E.,* Phoenix, Ariz.		1,905.65
Taylor, H. H., Tulsa		251,017.19
Tilghman, C. A.,* Oklahoma City	1,780.19	2,147.46
Thompson Oil & Gas Co., Tulsa	4,720.16	6,146.62
Treadaway, Ella,* Seminole		2,127.21
Tidal Oil Co., Tulsa	683,204.63	877,119.32
Tidal Oil Co.,* Tulsa		615.24
Tidal Oil Co., Tulsa		26,235.41
Tidal Oil Co.,* Tulsa	11,631.93	13,608.03
Thlocco Oil Co., Tulsa	12,065.77	17,181.70
J. N. Thompson,* Tulsa	1,453.29	1,973.89
Thurman Oil Co., Tulsa	6,022.98	7,008.15
Thurman Oil Co., (by Receiver*) Tulsa	164,583.23	217,262.48
Ursel, Flored S., Oklahoma City	4,962.31	7,184.25
Ursel, Flored S.,* Oklahoma City		414.73
United Royalty Co.,* Newkirk		1,992.28
Umpleby, J. B.,* Oklahoma City	2,822.29	3,961.40
Union Oil & Mining Co., Tulsa	5,392.22	7,378.68
United Eight Oil Trust, Madill		11,737.58
United Royalties Corp.,* Wichita Falls	1,619.21	1,942.25
Urschel, C. F., Oklahoma City	4,962.31	7,184.25
Urschel, C. F., Oklahoma City		414.73
Umburn, W. L., Weleetka		10,588.17
Voorhees, Leon G.,* Oklahoma City	17,630.16	22,844.37
Vassar, Amanda,* Tulsa		3,942.76
Vance, S. E.,* Tulsa	3,170.53	4,376.96
Vernon Oil & Gas Co., Blackwell	12,475.74	17,035.60
Varnum, W. F.,* Seminole	11,700.92	15,553.36
Varnum, W. F.,* Shawnee	15,807.22	21,363.26
Viersen, Sam K.,* Okmulgee	20,003.47	26,924.95
Vierson, Sam K., (suspense),* Seminole	21,373.01	28,499.12
Valley Osage Oil Co., Tulsa		28,606.11
Wood, Roy,* Oklahoma City		19,224.16
Walker, E. A.,* Oklahoma City	23,800.04	30,469.25
Walker, May M., Oklahoma City		1,492.60
Ward Oil & Gas Co., Tulsa	6,930.71	8,578.14
Waltman, J. L. and Waltman, L. C.,* Stillwater		7,847.89
Williams, C. D.,* Ardmore		2,571.68
Wilson, Geo. S., Muskogee		13,062.76
Wilson, Jessie May,* Shawnee		4,990.45
Wilcox, Flossie E.,* Melrose Park, Ill.		4,990.45
Whitehill Oil Corp., Tulsa		5,046.76
Ward, H. Z.,* Heavener		5,091.98
Watchorn Oil & Gas Co., Oklahoma City	42,754.28	57,256.09
Whitney, E. W.,* Wewoka		96,375.65
Woolery, K. S.,* Dallas, Texas	25,363.93	33,571.19
Woolery, K. S.,* Dallas, Texas		1,595.72
Wright, J. H., Sapulpa		36,392.97
Winkler, L. W., Duncan		7,142.45
Winkler & McQueen, Duncan		43,856.85
Wilcox, H. F., Oil & Gas Co., Tulsa	406,624.29	533,629.08
Wilcox, H. F., Oil & Gas Co.,* Tulsa	2,712.61	4,470.69
Wittmer Oil & Gas Properties, Pittsburgh, Pa.	6,963.57	9,807.89
Wolverine Pet. Corp., St. Louis	209,479.39	246,890.11
Wolverine Pet. Corp., St. Louis		15,857.11
Westheimer & Daube, Ardmore	98,654.88	131,382.90
Westheimer & Daube,* Ardmore	16,754.83	20,286.23
Warner-Caldwell Oil Co., Titusville, Pa.	26,540.19	34,496.92
Wood Oil Co., Tulsa		16,286.00
Wiser Oil Co., Bartlesville	84,098.37	103,348.42
Washington Royalties Co.,* Bartlesville	7,326.01	10,478.39
Wentz Oil Corporation, Ponca	1,220.89	1,629.90
Wentz Oil Corporation, Ponca	253,012.03	376,556.21
Waltman, L. C. & J. L., Stillwater		11,059.78
Wigton & Long Co., Okmulgee		24,799.00
Winona Oil Co. of Delaware, Tulsa	45,127.96	87,825.45
Western Oil Corporation, Tulsa		5,089.15
Whitehill Oil Corporation,* Tulsa	1,619.46	2,429.79
Whitehill Oil Corporation, Tulsa	4,953.25	6,249.70
Waters, C. W., by Texas Co., Tulsa	1,657.78	2,645.40
Wood, James, New York City		6,896.05
Wagner, Edw. E. & Elmer T.,* Cement		2,036.97
Westervelt, E. E.,* Oklahoma City		2,331.00
Westervelt, E. E., Oklahoma City		8,649.62
Walker, J. Carter, Orange, Va.		2,206.39
Walker, C. C.,* Okemah		7,354.77
Wah-Shah-She Oil Co., Bartlesville	3,826.01	4,970.95
Westland Oil Corp., Tulsa	37,545.33	51,483.67
White Eagle Oil & Refg. Co., Wichita, Kan.	5,490.40	8,260.13
Wilson, Leona Love,* Sapulpa		2,894.38
Western Royalty Co., Tulsa	2,006.82	3,704.57
Wolcott, C. W.,* Gdn., Coweta		5,002.84
White, C. O.,* Okemah	2,028.17	2,743.64
White, C. O., Okemah		8,532.67
Wrightsman Pet. Co., Tulsa	1,996.18	2,448.81
Windler, Louis,* Enid		2,353.48
Westerly Oil Co., Bartlesville	4,396.71	5,910.86
Williams, T. O.,* Tonkawa		2,478.70
Walsh Oil Co., Tulsa	6,260.53	7,732.29
Welsh, J. L.,* Blackwell		3,612.95
Welsh, Ruth,* Blackwell		3,284.55
Williams, H. E., Tr.* Muskogee		6,036.63
Wellsville Oil Co. et al, New York City		8,108.67
Willmott, John W.,* San Diego, Cal.		5,695.02
Wolfe, W. W.,* Tulsa	1,563.78	2,083.98
Wolfe Oil Corporation,* Bristow	8,292.69	11,420.95
Walker, Louis H.,* Santa Ana, Cal.		2,310.46
Wright, James,* Bristow		7,163.47
Worrell, E. L.,* Ryan	1,258.74	2,038.70
Wilson, Ivin F.,* Wewoka		5,222.87
Woods, W. E.,* Cox City		5,458.45
Wood, H. L., Agt.,* Morris		2,734.70
Young, J. Wright,* Broken Arrow	1,970.00	2,533.51
York Oil & Gas Co., Muskogee	3,986.86	5,875.96
Yount, J. B.,* Tonkawa		3,175.19
Youngblood, lease, Seminole		4,030.42
Zola Oil Co., Tulsa	17,967.62	21,976.26
Zollars, Emmie M.,* Lincoln, Ill.		2,011.23
Zachary, A. J.,* Marlow		3,498.16

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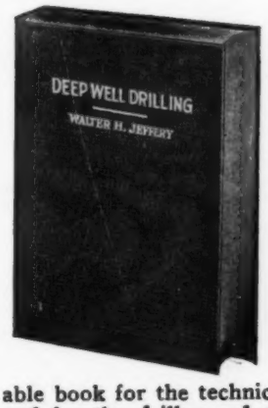

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HOW OIL MEN PLAY

Sanders, Rio Bravo Chief Clerk, Is Houston's Champion Bowler

BACK in the days when the American colonies were a part of the British Empire, so the story goes, there lived a simple, good-natured fellow of Dutch extraction, and on a fine autumnal day he took his dog and went squirrel shooting up in the Catskill Mountains to find surcease from the ever-scolding tongue of his termagant wife. It was while on this little outing that he began his 20-year nap, for which he is justly famous. Before now, of course, you have recognized in him our old friend Rip Van Winkle, holder of the world's record in non-stop sleeping.

There is no excuse for Rip in this story, however, other than one of the circumstances surrounding the beginning of that remarkable snooze. It will be remembered that while on this particular ramble through the woods, he was drafted as a waiter for a company of strange-looking men, being obliged to serve them with a beverage. While they weren't looking he stole a few sips of the liquor, which was evidently nearly as powerful as some that is on the market today, since it knocked him out for 20 years. The company of men whom he was serving, it will also be remembered, were in a hollow of the mountains, whence there had issued long, rolling peals, like distant, rumbling thunder while Rip was approaching it. This sound, he eventually found, was caused by the strange men at their game of nine pins. It later developed that the players were the spirits of Henry Hudson and his valiant crew of the "Half Moon," who had returned for an earthly party in the land they had explored in 1609.

The point which it is intended to bring out in the above narration is that the game of bowling, in which one of Houston's oil men is highly proficient, originated many years ago, and that it was in the beginning an outdoor sport. It has been played for centuries in Germany and the Low Countries, and is still popular there; but it attains its greatest popularity in the United States, where it was introduced from Holland in colonial times.

And now at last we come to our story.

In Houston there is a hall known as the Turnverein, in which there is a room given over to bowling alleys. Among the men who make the big room echo to the sound of rolling balls and falling pins there is one who stands out as a star performer—a player who has to his credit some records which have never been equaled in Houston or probably in the Southwest. This champion bowler is a member of the oil fraternity of Houston, and, incidentally, is as proficient in his vocation as in his avocation. He is W. H. (Bill) Sanders, youthful chief clerk and secretary to the vice-president and general manager of the Rio Bravo Oil Company.

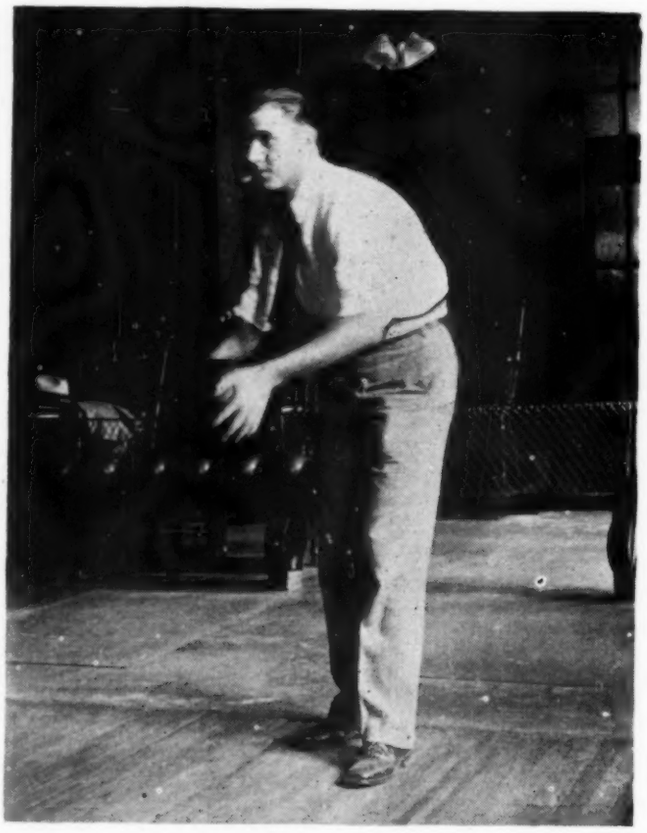
Sanders began his bowling career three or four years ago on the Houston Turnverein alleys, and bowls every Tuesday night with a league consisting of six teams of five men each. His bowling during the past year has been particularly impressive, the record that he made last July 19 showing him at his best.

On the night of July 19 Sanders smashed various records. In league bowling he hit an even 700 for three games. A score this high had never been made before in Houston except by himself, his previous high mark having been 714. In this series his high game was a 268.

Bowling doubles in the next six games with Dave Bryant as his partner, he continued to score high, the first three of those six games netted him 669 pins.

Now comes the most enviable record of all—made in the last three of the nine games he played that night. In the second of these last three games he spared in the first frame and then struck all the way out, giving himself a 290 game, another record. Too bad his first ball could not have been good for a strike instead of a spare to give him a perfect game of 300. Previous to this occasion, the local high record for a game was 285, held by G. T. Cristoph.

Starting his third game of this same series, Bill continued to strike until he had completed his fifth frame, making a total of 16 consecutive strikes, another local record. After he had rolled his last ball in the last frame of the last game, he had established what local bowlers believe a record for bowling in this part of the country. His 763 for the last three games and his total of 2132 pins for nine consecutive games, or an average of 237 per game, is a record hard to beat. His individual games as they were rolled were as follows: 227, 205, 268, 248, 204, 217, 205, 290, 268.



HOUSTON'S CHAMPION BOWLER

As in every other game, practice makes for perfection in bowling, Sanders says, but to become a fairly good player does not require an excessive amount of practice. It is an invariable rule, he says, that anyone who takes up the game becomes enthusiastic over it.

The game originated among the Teutonic people of Europe early in the Middle Ages. During the reign of Queen Anne and the first three Georges in England, a bowling green was as popular and necessary an adjunct to a gentleman's country seat as a billiard table is today. As an after-dinner sport of our burly British and Dutch ancestors it was very popular according to one historian, aiding in the digestion of their heavy meals, at that time consisting principally of beef and pudding lubricated with heavy ale and potent punch.

The game was introduced into America about the beginning of the eighteenth cen-

tury. It seems to have been very popular in New York City, where it was played out of doors on greens up until 1840, the principal resort of the bowlers being a public bowling green located at the foot of Broadway in a square called Bowling Green, and still known by that name.

That for the history of bowling. And now something further about Mr. Sanders, the Houston bowler.

He is the well-rounded type of person who always finds time to combine a reasonable amount of physical exercise and play with his work, refusing to fall into that inviting rut where there is an endless repetition of daily tasks and habits—where life becomes monotonous and the body gets torpid and the mind grows stale. In addition to bowling, he takes an interest in various other sports. On Saturday afternoons he plays tennis with other members of the Rio Bravo organization, and during the baseball season he plays on the office team. In 1920 he played on the baseball team of the Southern Pacific.

When he was attending the Heights High School in Houston, Sanders played on the football team one year, made the baseball team three consecutive years, and won honors in wrestling.

He went to work for the Rio Bravo Oil Company in 1917 as a stenographer, and has worked his way up to the position which he now holds.

Final Plans Being Made For Piping Utah Gas

Salt Lake City—Recent announcements in local newspapers give substantiation to the report that final plans for a natural gas line from Baxter Basin and Hiawatha Dome have been laid. Although the Hope Engineering & Supply Company has not officially announced its intention, it has been reported in Salt Lake City and Ogden that preliminaries have now come to a satisfactory conclusion, and that the line will be laid, probably during the summer.

Last July the Hope Engineering & Supply Company and operators in the Baxter Basin, Hiawatha, and Clay Basin districts signed a contract whereby the Hope interests secured option on the gas production in those areas with a view to constructing such a pipe line as is now being announced. The line is to serve Ogden and Salt Lake, and all intermediate industrial plants and small towns. It will be between 250 and 300 miles in length and will cost approximately $6,500,000 to $7,000,000. It is to be constructed of 20-inch pipe.

The operating companies who entered into the agreement with the Hope Engineering & Supply Company were the Producers & Refiners Corporation, the Wyoming Oil Fields Company, the Western States Oil & Land Company, the Ohio Oil Company, the Associated Oil Company of Wyoming and the Montacal Oil Company.

The developed open flow capacity of Baxter Basin and the fields covered by the contract is between 350,000,000 and 450,000,000 cubic feet of gas per day with ample reserves of proven territory to insure a sufficient supply of gas for many years.

Salt Lake City and Ogden are at present supplied with manufactured gas by local distributing companies and since these companies have had the necessary franchises, it has been necessary to negotiate with them for the transfer of the same. It is supposed that these negotiations have finally reached a satisfactory conclusion.

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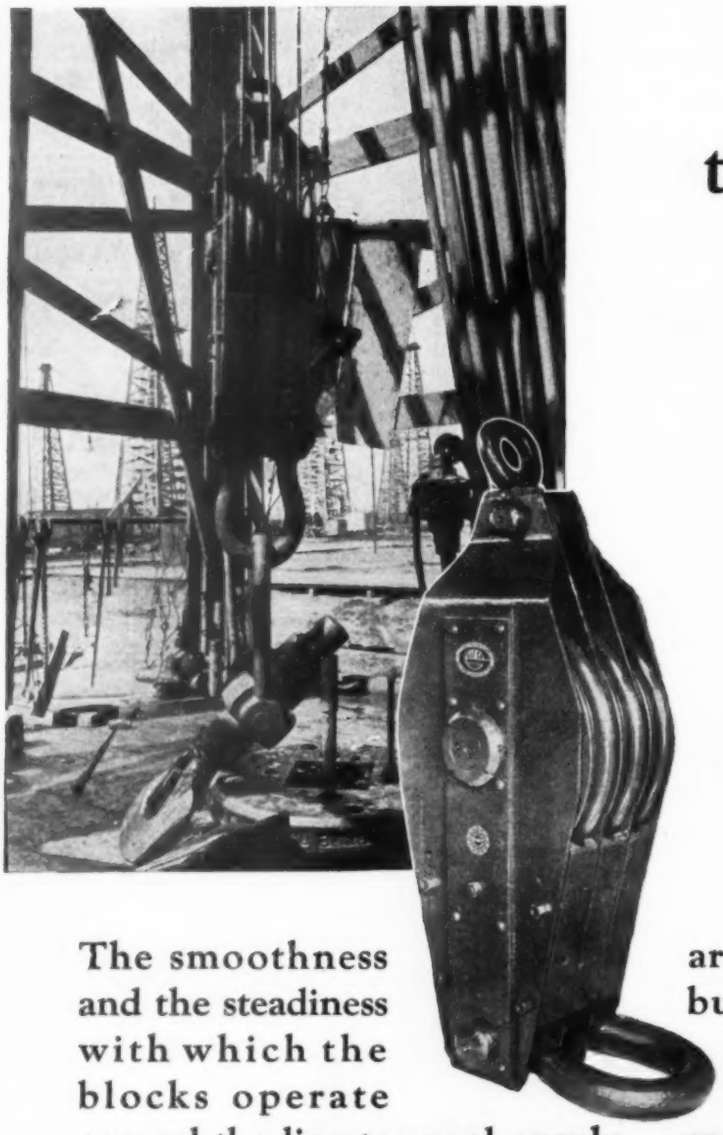

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